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Response to Comments Background Document for the Third Third Land Disposal Restrictions Proposed Rule November 22, 1989 (54 FR 48372) Volume 2-1. Capacity Related Comments

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NOVEMBER 22, 1989 (54 FR 48372)

Volume 2-1
Capacity Related Comments

May 8, 1990

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CHAPTER 1

INTRODUCTION

On November 22, 1989, the Environmental Protection Agency (EPA, the Agency) proposed a rule to prohibit the land disposal of the final third of the schedule of restricted hazardous wastes known as the Third Third (see 54 Federal Register 48372). The proposal outlined treatment standards and effective dates of prohibition for these wastes as well as for some First and Second Third "soft hammer" wastes, characteristic wastes, certain waste groups (e.g., multi-source leachate, radioactive mixed waste), and newly listed wastes. The proposed rule was issued pursuant to the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA).

The Agency requested public comment on the proposal. The regulated community, environmental organizations, trade associations, State and Federal agencies, and concerned citizens submitted over 300 written letters on the proposed rule. EPA developed three volumes of a comment response document: Volume 1 addresses comments on waste-specific treatment standards, Volume 2 addresses waste-specific capacity concerns, and Volume 3 addresses comments on broad policy issues. This document (Volume 2 of 3) presents a summary of and responses to capacity-related comments received by the EPA docket clerk in response to the proposed rule. The comments have been divided into 17 chapters, each addressing specific comment categories. Following is a brief introduction to the material covered in this document.

→ This volume covers chapters 1-7. The chapters discuss combustion, ignitable wastes, reactive wastes, arsenic, selenium, Cr., lead wastes.

Format

The format for the response to comments found in these chapters includes three areas: summary, response, and comments. The "summary" section provides a brief description of the content of the specific comment. Where possible, similar comments were grouped and summarized together. The "response" section follows each summary and provides EPA's response to the corresponding comment. With each summary and response, a "comments" section is provided. The comment section includes a list of each comment addressed and includes each EPA comment letter number. Following the list are copies of the relevant sections of the actual comment letter received by EPA.

Overview

Included here is a brief overview of the chapters included in this capacity response to comments document. Each chapter addresses comments related to surface-disposed wastes, with the exception of Chapter 12, which addresses all deep-well disposed wastes as a group, and Chapter 13, which addresses both surface-disposed and deep-well disposed multi-source leachate. Mixed radioactive wastes are all addressed in Chapter 14, rather than in the chapters corresponding to the RCRA waste in the mixed radioactive matrix.

- Chapter 2: Combustion
- Chapter 3: D001 Ignitable Characteristic Wastes
- Chapter 4: D002 Corrosive Characteristic Wastes
- Chapter 5: D003 Reactive Characteristic Wastes
- Chapter 6: Arsenic and Selenium Wastes
- Chapter 7: Lead and K061 Wastes
- Chapter 8: Mercury Wastes
- Chapter 9: Other Metals
- Chapter 10: F, K, U, and P Wastes
- Chapter 11: K048-K052 Wastes
- Chapter 12: Deepwell Injected Wastes
- Chapter 13: Multi-Source Leachate
- Chapter 14: Mixed Radioactive Wastes
- Chapter 15: Lab Packs
- Chapter 16: Soil and Debris Wastes
- Chapter 17: Miscellaneous Capacity Comments

CHAPTER 2

COMBUSTION

EPA received fifteen comments (Hazardous Waste Treatment Council (HWTC; 33), ThermalKem, (110), Rollins Environmental Services (124), Chemical Waste Management (CWM; 159), Ash Grove Cement (171), HWTC (172), CH2M-HILL (173), Environmental Systems Company (ENSCO; 188), Dupont (189), Sterling Chemicals (197), Envirocare of Utah (208), Browning-Ferris Industries (BFI; 214), Nortru, Inc. (241), Merck & Co., Inc. (242), and HWTC (L247)) addressing combustion-related issues. CH2M-Hill comments (173) were submitted on behalf of the Hazardous Waste Leachate Committee comprised of the following five companies: Chemical Waste Management; Waste Management of North America; Browning Ferris Industries/CECOS; E.I. Dupont de Nemours; and Dow Chemical Company. Five commenters (HWTC (172), CH2M-HILL (173), Dupont (189), BFI (214), and HWTC (L247)) questioned the Agency's methodology for estimating required and available capacity. Eleven commenters (HWTC (33), ThermalKEM (110), Rollins Environmental Services (124), Ash Grove Cement (171), HWTC (172), CH2M-HILL (173), ENSCO (188), Dupont (189), Sterling Chemicals (197), Nortru, Inc. (241), and Merck & Co., Inc. (242)) questioned EPA's available capacity estimate stating that the Agency had either under- or over-estimated available capacity. HWTC (172) addressed the Agency's approach for predicting future available capacity, and two commenters (CWM (159), and Envirocare of Utah (208)) addressed miscellaneous issues. In summary, commenters addressed five major issues:

- EPA's Capacity Analysis Methodology Is Questionable;
- EPA Under-Estimated Available Capacity;
- EPA Over-Estimated Available Capacity;
- EPA Did Not Include Capacity Scheduled To Come On-Line In The Future In The Available Capacity Estimate; and
- Miscellaneous.

2.1 EPA's Capacity Analysis Methodology Is Questionable

Summary:

Five commenters (HWTC (172), CH2M-HILL (173), Dupont (189), BFI (214), and HWTC (L247)) addressed EPA's capacity analysis methodology. Two of these commenters (CH2M-HILL (173), and Dupont (189)) questioned EPA's assumptions used for estimating quantities of wastes requiring combustion and three of these commenters (HWTC (172), CH2M-Hill (173), and BFI (214)) addressed the Agency's methodology for estimating available commercial combustion capacity. One commenter (HWTC (L247) disagreed with two other commenters' opinions regarding non-hazardous waste.

Two commenters (CH2M-HILL (173), and Dupont (189)) requested that the Agency reevaluate its current approach for estimating volumes of wastes requiring incineration capacity. Dupont (189) stated that EPA's capacity methodology is based on the assumption that all sludge/solids incineration capacity is available for land-banned wastes (i.e., hazardous wastes). Dupont stated that the toxicity and concentration of hazardous constituents in treatment residuals are considerably less than many non-hazardous waste streams. According to Dupont (189), EPA assumes that facilities who can legally landfill wastes will do so, rather than incinerate. While this may be a correct assumption for some companies, Dupont disagrees with this type of waste management practice. Dupont (189) indicated that their company often incinerates non-hazardous wastes because landfilling these wastes is an undesirable waste management practice. In 1987, Dupont sent approximately 6.4 million pounds of non-hazardous waste to commercial hazardous waste incinerators. Dupont (189) requested that the Agency include the volumes of non-banned and non-hazardous wastes that pose a greater risk than land banned wastes in the Agency's required capacity estimate. CH2M-HILL (173) also requested that non land-banned waste volumes be included in the required capacity estimate.

HWTC (L247) disagreed with CH2M-Hill (173) and Dupont's (189) comments that EPA must account for non-hazardous waste capacity requirements when determining available capacity.

According to HWTC (L247), EPA is required by statute to focus on hazardous waste capacity when evaluating the land disposal restrictions and treatment demands. In addition, HWTC (L247) disagreed that the non-hazardous waste materials are more toxic than D001 solids and sludges.

Three commenters (HWTC (172), CH2M-HILL (173), and BFI (214)) questioned EPA's methodology for estimating available capacity. HWTC (172) disagreed with EPA's methodology for determining utilized capacity. According to the Hazardous Waste Treatment Council (172), the Agency, by deducting capacity utilized for non-hazardous waste from available capacity, assumes that non-hazardous waste has priority over hazardous waste. HWTC believes that non-hazardous waste does not have priority and therefore requested that the Agency not subtract capacity utilized for non-hazardous wastes from maximum capacity when determining available combustion capacity.

CH2M-HILL (173) suggested that EPA consider obstacles to the operation of hazardous waste incinerators when determining available capacity. According to CH2M-HILL (173), many facilities are required to comply with state and local requirements in addition to the RCRA Part B permit. In some cases, full scale operation of the facility depends on approval processes for dewatering equipment, storage areas, or deep injection wells. CH2M-HILL (173) requested that EPA consider all requirements that affect timing or the amount of capacity available at each facility.

BFI (214) also addressed the Agency's available capacity estimate. BFI (214) indicated that the Agency should be aware that there is currently an ongoing pattern of "waste code discrimination." According to BFI (214), some facilities, such as incinerators, will not accept certain waste codes because of the impact the BDAT level for the underlying waste would have on the facility's residues.

Response:

EPA does consider non land-banned waste volumes when conducting the capacity analysis. If a facility differentiated between hazardous and non-hazardous wastes in the 1986 TSDR Survey, the treatment capacity required for non-hazardous wastes was subtracted from the maximum capacity when determining available capacity for regulated wastes. EPA assumes that facilities who reported that they treated non-hazardous waste in 1986 will continue to treat these wastes in the future. Adding additional volumes for non-hazardous waste currently land disposed would be assuming that TSDF facilities have changed their management practices.

The statute does not mandate any particular methodology for assessing available capacity. EPA's methodology seeks to reflect actual practice and availability as much as possible. EPA does not place priorities on the disposal of non-hazardous and hazardous waste. Many treatment facilities currently have contractual agreements with their clients to treat non-hazardous waste and EPA does not intend to force TSDRs to break these agreements in order to treat hazardous waste. EPA subtracts the non-hazardous utilized capacity volumes that were reported in the TSDR Survey from maximum capacity to derive a more realistic estimate of the capacity available for Third Third wastes.

The Agency agrees that certain requirements may prevent commercial incinerators from accepting regulated wastes; consequently, EPA includes only currently operating, approved interim status and permitted facilities in their available capacity estimate. EPA recently contacted EPA regional and state personnel to verify information provided by commenters (in particular the operating status of incinerators included in the capacity analysis). The Agency assumes that EPA region permit writers are aware of state and local obstacles that may prevent full scale operation of incineration facilities.

The Agency agrees that there are permitting limitations to consider when estimating available capacity (i.e., incinerators are permitted to take certain codes). Where commenters expressed particular concerns regarding specific waste codes, EPA contacted regional and state personnel to verify that treatment facilities are permitted and willing to accept the waste codes in question. As this commenter did not provide specific information on the waste codes or facilities involved, the Agency is unable to provide a more specific detailed response for this commenter's specific concerns.

Comments:

The comments addressing the Agency's capacity methodology are presented in the following order:

- Hazardous Waste Treatment Council (172);
- CH2M-HILL (173);
- Dupont (189);
- Browning-Ferris Industries (214); and
- HWTC (L247).

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

4. Priority of Non-hazardous Waste

In developing its estimate of available capacity, EPA first determined, from the 1986 TSD survey, how much capacity was already being utilized for the treatment of hazardous and non-hazardous waste ("Commercial Treatment/Recovery Data Set", pp. 6-7). EPA then deducted this "utilized capacity" from system capacity in order to determine "available capacity". (A somewhat different method was used in those instances where the capacity for treatment of hazardous waste was in some way more restricted than for the treatment of all wastes.)

EPA's TSD survey data indicates that a high percentage of system capacity was being utilized for treatment of non-hazardous waste. By deducting capacity utilized for non-hazardous waste from "available capacity", EPA is effectively assigning higher priority to the treatment of non-hazardous wastes than hazardous wastes.

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Docket Number: LD12-00173

Commenter: CH2M-HILL

Comment:

Competition for Incineration Capacity

EPA's capacity methodology assumes that 100 percent of the solid/sludge incineration capacity is available for land banned wastes, either from Third Third or previous land ban rules. EPA should recognize that some currently non-banned (and even non-hazardous) wastes may pose a greater risk than many of the land banned wastes. These non-banned wastes warrant consideration in the allocation of scarce incineration capacity.

The need to consider non-banned wastes is particularly clear where there is the potential that assigning leachate treatment residuals to incineration would displace more toxic, non-land banned wastes. By definition, these are treatment residuals, not process wastes. Their toxicity and concentrations of hazardous constituents are considerably less than many non-hazardous wastestreams. We believe that there are numerous instances where non-hazardous or non-land banned wastes are currently being incinerated. These wastes should continue to utilize scarce solids incineration capacity and not be displaced by leachate treatment residuals.

Docket Number: LD12-00173

Commenter: CH2M-HILL

Comment:

Determination of Incineration Capacity

Based on our study of the Capacity Background documents, it appears that the determination of a final capacity variance for leachate treatment residuals will be critically dependent upon EPA's assumptions about capacity for incineration of solids and sludges, particularly at three or four new or currently inactive incinerators. We urge EPA to conduct its own evaluation of the readiness and real capacity available at these facilities.

In conducting its reviews, EPA should consider the fact that the RCRA Part B permit is not the only obstacle to operation of hazardous waste incinerators. States and localities also impose requirements that these facilities must satisfy. It is not unusual for states to have separate air emissions permit requirements that must be satisfied in addition to RCRA permit requirements. In some cases, full-scale operation of the facility depends on ancillary features such as dewatering equipment, storage areas or deep injection wells, all of which have an approval process separate from the incinerator itself. EPA's evaluation should consider all requirements that could affect the timing or amount of capacity available at each facility.

Docket Number: LD12-00189

Commenter: E.I. DuPont De Nemours & Company

Comment:

4. EPA SHOULD CONSIDER OTHER THAN "LAND BANNED" WASTES WHEN EVALUATING INCINERATION CAPACITY

EPA's capacity methodology assumes that 100% of the solids/sludge incineration capacity is available for land banned wastes, either from the "Third-Third" or previous land ban rules. EPA should recognize that some currently non-banned (and even non-hazardous) wastes may pose a greater risk than many of the land banned wastes. These wastes warrant consideration in the allocation of scarce incineration capacity.

This is particularly clear where there is the potential that assigning leachate treatment residuals to incineration would displace more toxic, non-land banned wastes. By definition, these are treatment residuals, not process wastes. Their toxicity and concentrations of hazardous constituents are considerably less than many non-hazardous process waste streams. For example, in 1987 Du Pont facilities sent nearly 6.4 million pounds of nonhazardous waste to commercial hazardous waste incinerators. We believe that there are numerous instances where non-hazardous or non-land banned wastes are currently being incinerated. These wastes should continue to utilize scarce solids incineration capacity and not be displaced by leachate treatment residuals.

In assigning capacity to land banned wastes, EPA incorrectly assumes that wastes that can be landfilled will be landfilled in preference to incineration or some other form of treatment. While this assumption may be true for some companies, Du Pont often chooses to send certain non-hazardous wastes to hazardous waste incinerators because it believes that landfilling for these particular types of wastes is an undesirable waste management practice.

Du Pont requests that EPA reevaluate its current approach and recognize that land banned wastes should not always displace other wastes in utilizing scarce incineration capacity.

Docket Number: LD12-00214

Commenter: Browning-Ferris Industries (BFI)

Comment:

As EPA acknowledges, the purposes of the statutory storage prohibition is to prohibit the use of long-term storage to circumvent treatment requirements imposed by the LDRs. 54 Fed.Reg. 48496, citing 129 Cong. Rec. H8139 (daily ed. Oct. 6, 1983). There are a number of wastes, however, for which storage is required solely because there does not exist adequate disposal capacity. In such a situation, storage is not for the purpose of evading the land disposal prohibition; it is the only alternative available to manage the wastes.[12]

There are numerous examples of this problem. For instance, wastes for which a variance petition is pending may need extended storage, unless the Agency substantially improves the speed of the variance process. Mixed wastes that contain a radioactive waste

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[12] Other legitimate storage activities that might be prohibited under a strict reading of the statutory prohibition include storage of wastes that cannot be immediately treated due to legitimate down-time of an incinerator or other treatment unit, and storage of wastes pending the results of waste analyses to determine compliance with the land disposal restrictions.

Docket Number: LD12-00214 (continued)

Commenter: Browning-Ferris Industries (BFI)

Comment: (continued)

and a solvent or California List waste provide another example. These wastes are not covered by the two-year treatment capacity variance proposed by the Agency for other mixed wastes.[13] See 54 Fed. Reg. at 48485. However, it is well recognized that no disposal capacity exists for these wastes. Id. Therefore, after May 8, 1990, generators of this mixed waste will have no alternative but to store the waste until disposal capacity becomes available. Similarly, wastes for which a two-year capacity variance is given may be in the same situation after May 8, 1992 if adequate capacity does not exist at that time. In addition, there are currently permit mismatches that require extended storage, and the Agency should also be aware that there is now an ongoing pattern of "waste code discrimination" -- i.e., some facilities, such as incinerators, will not accept certain waste codes because of the impact the BDAT level for that particular underlying waste would have on the facility's residues. This phenomenon also increases the need for extended storage.

Comment Number: LD12-L0247 2-12 Combustion

Commenter: Hazardous Waste Treatment Council

Comment:

The HWTC disagrees with the concerns expressed by DuPont (LD12-00189, pg. 35), and by the Leachate Committee (Docket #LD12-00173) that EPA must account for non-hazardous waste capacity requirements, and not replace the non-hazardous capacity with D001 solid and sludge capacity. Many incineration companies are burning non-hazardous waste as a result of the shortfall in hazardous waste for incineration. The non-hazardous waste materials being incinerated are not more toxic than D001 solids and sludges as DuPont implies. Many of these materials are off-spec pharmaceuticals and consumer commodities that could be treated in other non-Subpart O units. EPA is required by statute to focus on hazardous waste capacity requirements when evaluating the land disposal restrictions and treatment demands. Even without deleting the non-hazardous waste capacity, however, adequate incineration capacity does exist for D001 solids and sludges.

2.2 EPA Under-Estimated Available Combustion Capacity

Summary:

Seven commenters (Hazardous Waste Treatment Council (HWTC; 33), ThermalKEM (110), Rollins Environmental Services (124), Ash Grove Cement (171), HWTC (172), ENSCO (188), and Nortru, Inc. (241)) indicated that EPA under-estimated available combustion capacity. Two of these commenters (Ash Grove Cement (171), and Nortru, Inc. (241)) requested that cement kilns be included in the available capacity estimate for wastes requiring incineration.

Two commenters (HWTC (33), and ENSCO (188)) mentioned that the Hazardous Waste Treatment Council conducted a survey of their incineration companies and determined that available capacity for D001 sludges and solids is 18.4 million gallons per year. HWTC stated that EPA had omitted an existing, operating, Part B permitted Subpart O incinerator and based their capacity analysis on an outdated survey that does not take into account capacity that is available as a result of trial burns conducted after 1986. According to HWTC (172) and Rollins Environmental Services (124), the Commercial Treatment/Recovery Data Set omits a mechanically fluidized-bed rotary reactor located at Rollins Environmental Services in Deer Park, Texas. This unit's permitted capacity is 12,000 pounds per hour, and permitted emission levels are based on 92 percent on-line operations. Approximately 25 percent of the tonnage being fed to the incinerator is atomizable liquids. This reactor will provide approximately 8.7 million gallons per year of available sludge/solid incineration capacity.

In addition to omitting an incinerator, HWTC (172) also indicated that the Agency did not consider available capacity resulting from trial burns that allow for permitting of higher feed rates. Two of HWTC's members have justified a minimum of twice the capacity indicated in the TSDR Survey for solids and sludges. ThermalKem (110) made a similar assessment stating that the TSDR Survey data does not reflect additional capacity available from a trial burn conducted after 1987. According to ThermalKEM (110), the TSDR Survey under-reported their facility's capacity to treat D001 by a factor of 10. HWTC (33 and 172), Thermalkem (110), and Rollins Environmental Services

(124) requested that the Agency update their available capacity estimate to include this additional capacity.

Ash Grove Cement (171), and Nortru, Inc. (241)) requested that cement kilns be included in the available capacity estimate for wastes requiring incineration. Ash Grove Cement (171) expressed concern that the Agency had specified incineration and excluded fuel substitution as the BDAT for numerous waste codes. According to Ash Grove (171), the Agency, by eliminating fuel substitution as an acceptable BDAT, has restricted valid energy recovery operations in cement kilns. Ash Grove and Cadence have recently patented a solids energy recovery program. This program, which accounts for 90,000 tons per year of capacity, is available to any cement kiln and is in full scale operation in three states.

Nortru (241) suggested that the Agency include cement kilns in the available capacity estimate for certain U waste codes (U019, U051, U052, U055, U056, U186, U076, U077, U080, U210, U226, and U228) and D002 and D004 through D011 characteristic wastes that are amenable to fuel substitution and exhibit a D001 characteristic. According to Nortru (241), many companies mischaracterize their wastes as D001 based on the characteristic of combustibility. These types of wastes are very amenable to the fuel recovery process. Nortru (241) stated that cement kilns are capable of handling these wastes as efficiently and safely as incinerators; consequently, they should be included in the EPA's estimate of available incineration capacity. Nortru stated that its affiliated operating companies, Petro-Chem Processing Inc. (Petro-Chem, Solvent Distillers Inc. (SDI), and RTR, Inc. (RTR), offer innovative recycling alternatives to wastes which have been incinerated in the past. Petro-chem has developed an advanced fuel blending technique to process highly viscous and solid materials into useable fuel products, SDI has encouraged reuse of reclaimable solvents, and RTR has eliminated the need to landfill D001, F003 and F005 solids and paint sludges. According to Nortru (241), Petro-Chem recently began operation of the Container Processing System which processes a wide variety of containerized liquid, semi-liquid, semi-solid, highly viscous and solid waste streams into fuel products. Nortru (241) stated that the treatment capacity for sludges/solids and high viscosity materials at Petro-Chem is 25 million gallons per year, and that by mid 1990, this capacity will increase to over 52.7 million gallons per year. According to Nortru, RTR also commissioned a new plant to recycle oil water emulsion saturated with paint sludges in 1989. Nortru believes that the Agency, by excluding fuel substitution as an alternative for treating many U, P, and K wastes that are amenable to and are currently being fuel blended, has placed an unnecessary burden on already limited incineration capacity.

Response:

EPA agrees that the Rollins rotary reactor was omitted from the available capacity estimate; consequently the Agency has included this unit in the revised capacity estimate. EPA has determined that the maximum capacity at Rollins in Deer Park, Texas is about 100,000 tons per year. The Rollins facility in Deer Park, Texas has two independent incinerator "trains" according to it's final RCRA Permit. The first train consists of a rotary kiln (80 MBtu/Hr maximum rating), rotary reactor (36 Mbtu/Hr maximum rating), Loddby liquids burner (100 MBtu/Hr maximum rating), and afterburner. The second train (train II) consists of a rotary kiln (120 MBtu/Hr maximum rating), rotary reactor (33.5 MBtu/Hr maximum rating), and afterburner. Maximum overall hourly waste feed rates are specified in the permit for each unit of each train. The TSDR Capacity Data Set reports only two units, the two rotary kilns, both of which are reported to include liquid injection ports (presumably the Loddby burner, although the permit only identifies one Loddby Burner). Rollins' comment on the proposed third third rule indicated that EPA omitted rotary reactor #2 from its capacity analysis; but did not mention rotary reactor #1, which was also excluded from the analysis for the proposed rule. Consequently, the Agency contacted the facility and verified that rotary reactor #1 is not currently operating. Rollins' comment also indicated that the rotary reactor generally burns 75 percent of the permitted maximum in the form of sludges and solids. EPA estimated the facility's overall sludge/solid capacity based on the standard 75 percent of the permitted maximum, and 7200 operating hours per year (versus 8060 hours per year as suggested by Rollins) for the two rotary kilns and the #2 rotary reactor. Rollins' comment on the proposed Third Third rule indicated that EPA omitted rotary reactor #2 from its capacity analysis; but did not mention rotary reactor #1, which was also excluded from the analysis for the proposed rule. A contact from Rollins confirmed that the second rotary reactor has not been constructed. We estimated the existing rotary kiln's overall sludge/solid capacity based on 75 percent of the permitted maximum, and 7200 operating hours per year (versus 75 percent and 8060 hours per year suggested by Rollins' comment on the proposed Third Third rule). This units maximum capacity was thus estimated at 32,400 tons/yr.

The Agency agrees that increases in available capacity resulting from trial burns that allow for permitting of higher feed rates should be included in the available combustion capacity estimate. EPA recently contacted regional and state officials to obtain permit information on eleven of the fifteen commercial incinerators. Based on information obtained from regional and state contacts, EPA has revised its incinerator capacity data on permitted capacity limits based on trial burns conducted after 1986.

HWTC (172) indicated that two of their organization's members have twice the capacity for sludge/solid wastes reported in the TSDR Survey. As HWTC did not submit detailed information on these two facilities, EPA is unable to determine whether the Agency's revised capacity estimate includes the correct information for these facilities.

EPA agrees that the TSDR Survey under-estimated ThermalKEM's capacity to treat (i.e., incinerate) D001 wastes. Thermalkem is a fully permitted facility that employs a multiple hearth kiln rated at 42 MBtu/Hr. EPA contacted ThermalKEM to clarify this comment. The facility contact indicated that trial burns conducted since 1987 raised the maximum heat release from 18 MBtu/hr to 42 Mbtu/hr; and that ThermalKEM has modified their process to allow higher sludge/solid feed rates. These modifications include a ram feed system for charging containerized solids, a system for transporting wastes from steel drums to fiber packs, and an oxygen enrichment system for improving combustion, and improved air pollution control equipment. The facility contact indicated that these modifications allowed the facility to burn as much as 80 to 85 percent sludges and solids, and that ThermalKEM typically burns wastes with heating values ranging from 5000 Btu/lb to 8000 Btu/lb. EPA concluded based on a technical considerations that this modified unit could burn higher percentages of sludges and solids than would be expected from a typical fixed hearth unit. Using 75 percent sludges and solids as for rotary kilns, and the average of the range of heating values provided by the facility contact; EPA estimated this facilities maximum annual sludge/solid capacity to be 18,427 tons. This estimate is 5 percent higher than the sludge/solid capacity reported the TSDR Capacity Data Set.

EPA agrees that some cement kilns are suitable for burning sludges and solids. EPA has included in its revised capacity estimate capacity from cement kilns that have adopted technologies that allow them to burn sludges and solids and are currently operating in compliance with state and local requirements as well as the sham recycling policy (i.e., the generated waste must ordinarily have a BTU value of 5000 to 8000 BTU/lb) in their revised capacity estimate. EPA contacted regional and state officials to update or verify the activities of each reuse-as-fuel (RAF) facility in the TSDR Capacity Data Set reported as having sludge/solid capacity in either 1988 or 1989/1990. In general the Agency was not always able to confirm actual capacity figures, but in most cases obtained at least information to determine whether the facility was accepting hazardous wastes. Because of the exempt status of most RAF facilities, information available from regional and state contacts was limited, and often did not include certain information on the physical form of wastes being burned. For its estimate, the Agency included the capacities reported in the TSDR Capacity Data Set for those facilities who were confirmed as burning hazardous fuel, and omitted those which could not be confirmed by regional or state contacts. Based on this analysis, EPA has determined that commercial RAF facilities including cement kilns collectively provide a maximum capacity of about 28,000 tons per year. Exhibit 2-1 lists those cement kilns included in the available capacity estimate. With three major exceptions, the estimates for most RAF facilities that are currently accepting hazardous waste were taken directly from the TSDR Capacity Data Set. Because Ash

EXHIBIT 2-1

CURRENTLY OPERATING COMMERCIAL HAZARDOUS WASTE FUEL BURNERS

FACILITY	UNIT NUMBER/TYPE	WASTE FORMS BURNED
LAFARGE CORP-DEMOPOLIS PLANT DEMOPOLIS, AL ALD981019045	1 CEMENT KILN	LIQUID
ENVIRONMENTAL SYSTEMS COMPANY EL DORADO, AR ARD069748192	1 INDUSTRIAL BOILER	LIQUID
ASH GROVE-FOREMAN CEMENT FOREMAN, AR ARD981512270	2 CEMENT KILNS	LIQUID SLUDGE SOLID
ROMIC CHEMICAL CORPORATION EAST PALO ALTO, CA CAD009452657	1 INDUSTRIAL BOILER	LIQUID
OMEGA CHEMICAL CORP. WHITTIER, CA CAD042245001	2 INDUSTRIAL BOILERS	LIQUID SLUDGE
GENERAL PORTALND INC. (SYSTECH) LEBEC, CA CAT080031628	1 CEMENT KILN	LIQUID
UNITED OIL RECOVERY INC.	1 INDUSTRIAL BOILER	LIQUID
FLORIDA SOLITE GREEN COVE SPRING, FL FLD004059085	3 AGGREGATE KILNS	LIQUID
MID FLORIDA MINING CO. LOWELL, FL FLD991275355	1 FULLERS EARTH KILN	LIQUID
TRI-STATE STEEL DRUM CO., INC. GRAYSVILLE, GA GAD033842543	1 INDUSTRIAL BOILER	LIQUID
SAFETY-KLEEN DOLTON, IL ILD980613913	2 INDUSTRIAL BOILERS	LIQUID
WASTEX RESEARCH INC. EAST ST. LOUIS, IL ILD980700744	2 UTILITY BOILERS	LIQUID
COPLAY CEMENT CO. LOGANSPORT, IN IND005081542	2 CEMENT KILNS	LIQUID SLUDGE
AMERICAN CHEMICAL SERVICE, INC. GRIFFITH, IN IND016360265	1 INDUSTRIAL BOILER	LIQUID
ASH GROVE-CHANUTE CHANUTE, KS KSD031203318	2 CEMENT KILNS	LIQUID SLUDGE SOLID

EXHIBIT 2-1 (CONTINUED)
CURRENTLY OPERATING COMMERCIAL HAZARDOUS WASTE FUEL BURNERS

FACILITY	UNIT NUMBER/TYPE	WASTE FORMS BURNED
GENERAL PORTLAND INC. FREDONIA, KS KSD980633259	2 CEMENT KILNS	LIQUID
SAFETY-KLEEN ENVIROSYSTEMS NEW CASTLE, KY KYD053348108	1 INDUSTRIAL BOILER	LIQUID
KENTUCKY SOLITE BROOKS, KY KYD059568220	1 AGGREGATE KILN	LIQUID SOLID
LEHIGH PORTLAND CEMENT FREDERICK, MD MD003064854	4 CEMENT KILNS	LIQUID
LAFARGE CORP. ALPENA, MI MID005379607	2 CEMENT KILNS	LIQUID
SYSTECH CORP ALPENA, MI MID981200835	5 CEMENT KILNS	LIQUID
DUNDEE CEMENT CO. CLARKSVILLE, MO MOD029729688	1 CEMENT KILN	LIQUID
CENTRAL MO PAVING CO. INC. MOBERLY, MO MOD046381445	1 ASPHALT KILN	LIQUID
UNION ELECTRIC COMPANY	1 UTILITY BOILER	LIQUID
CAROLINA SOLITE ALBEMARLE, NC NCD003152642	4 AGGREGATE KILNS	LIQUID
SEABOARD CHEMICAL CO. JAMESTOWN, NC NCD071574164	2 INDUSTRIAL BOILERS	LIQUID
ASH GROVE CEMENT CO. LOUISVILLE, NE NED007260672	2 CEMENT KILNS	LIQUID SLUDGE SOLID
SOLVENTS RECOVERY SERVICE LINDEN, NJ NJD002182897	1 INDUSTRIAL BOILER	LIQUID
PURE STREAM INC. BLACKWOOD, NJ NJD021045067	2 INDUSTRIAL BOILERS	LIQUID

EXHIBIT 2-1 (CONTINUED)
CURRENTLY OPERATING COMMERCIAL HAZARDOUS WASTE FUEL BURNERS

FACILITY	UNIT NUMBER/TYPE	WASTE FORMS BURNED
STANDARD TANK CLEANING CORP. BAYONNE, NJ NJD068292648	2 INDUSTRIAL BOILERS	LIQUID
BLUE CIRCLE ATLANTIC CEMENT RAVENA, NY NYD002069557	2 CEMENT KILNS	LIQUID
NORLITE CORP. COHOES, NY NYD080569935	2 AGGREGATE KILNS	LIQUID
RESEARCH OIL CO. CLEVELAND, OH OHD004178612	2 PROCESS HEATERS 2 INDUSTRIAL BOILERS	LIQUID
LAFARGE CORP.	2 CEMENT KILNS	LIQUID
SOUTHWESTERN PORTLAND CEMENT FAIRBORN, OH OHD981195779	1 CEMENT KILN	LIQUID
HARLEY-DAVIDSON MOTOR CO. INC. YORK, PA PAD001643691	2 INDUSTRIAL BOILER	LIQUID
KEYSTONE PORTLAND CEMENT CO. BATH, PA PAD002389559	2 CEMENT KILNS	LIQUID
MEDUSA CEMENT CO. WAMPUM, PA PAD083965897	3 CEMENT KILNS	LIQUID
INTERNATIONAL METALS RECLAMATION ELLWOOD CITY, PA PAD087561015	OTHER KILN	LIQUID
SAFETY CLEAN MANILA, PR PRD090399718	2 INDUSTRIAL BOILERS	LIQUID
SAN JUAN CEMENT CO. SAN JUAN, PR PRD980526115	1 CEMENT KILN	LIQUID
NARRAGANSETT IMPORVEMENT PROVIDENCE, RI RID006807911	1 AGGREGATE KILN	LIQUID
SANTEE CEMENT CO. SC	2 CEMENT KILNS	LIQUID

EXHIBIT 2-1 (CONTINUED)
CURRENTLY OPERATING COMMERCIAL HAZARDOUS WASTE FUEL BURNERS

FACILITY	UNIT NUMBER/TYPE	WASTE FORMS BURNED
GROCE LABORATORIES GREER, SC SCD058754789	3 INDUSTRIAL BOILERS	LIQUID
AMERICAN RESOURCE RECOVERY CORP. MEMPHIS, TN TND991279480	2 INDUSTRIAL BOILERS	LIQUID SLUDGE
SOLITE CORP. ARVONIA, VA VAD042755082	4 AGGREGATE KILNS	LIQUID
DUPONT E I DE NEMOURS & CO. BELLE, WV WVD005012851	5 INDUSTRIAL BOILERS 1 SULFUR RECOVERY FURNACE	LIQUID
STAUFFER CHEMICAL HAMMOND, IN IND001859032	1 INDUSTRIAL BOILER	LIQUID SLUDGE

Grove Cement's sludge/solid capacity was not included in the TSDR Capacity Data Set, EPA conducted an independent analysis of this facility's capacity.

Before assuming that Ash Grove's recently patented technology should be included in its capacity estimates, EPA engieers reviewed the process, and contacted EPA regional and state officials who have witnessed and/or are familiar with the Ash Grove/Cadence process. EPA's found no technical reason to doubt that the process could work as claimed in Ash Grove's comment. State and regional contacts confirmed that Ash Grove had implemented the technology on at least four operating kilns at its facilities in Foreman, Arkansas; Louisville, Nebraska; and Chanute, Kansas. State officials from Arkansas and Kansas have accepted the process as legitimate energy recovery and are allowing the kilns to operate. As a result of this confirmation, EPA has included the sludge/solid combustion capacity at Ash Grove's six operating modified kilns in our estimates.

The Ash Grove/Cadence comment stated that Ash Grove's three facilities currently possesses a combined sludge/solid capacity of 90,000 tons/year, but they did not indicate how this number was obtained. EPA estimated each kiln's sludge/solid capacity in the following manner:

	6	Gallons per charge
x	1	Charge per kiln rotation
x	60	Kiln rotations per hour
x	8000	hours per year
/	240	Gallons/ton
=	12,000	Tons/year

Each charge was assumed to contain 6 gallons of sludge/solids as specified in the process patent. One charge was assumed per rotation of the kiln (as determined from the patent), and the kiln was assumed to operate 8000 hours per year (based on EPA's judgement of a normal operating year). Each kiln was assumed to rotate at 60 revolutions per hour, the limit imposed by the permit issued to the Foreman, Arkansas facility. EPA's standard conversion factor of 240 gallons/ton is based on the density of water and was used for consistency with other analyses.

Using this method for each of the six kilns, EPA estimates Ash Grove's overall maximum sludge solid capacity to be 72,000 tons/year.

Nortru (241) expressed concern that the Agency has neglected capacity offered by fuel substitution for treatment of certain F, K, U, and P wastes. (Commenter does not specify wastewaters or nonwastewaters. Since Nortru is discussing incineration, however, the Agency assumes that for the halogenated organics and aromatics and other hydrocarbons the commenter is referring to wastewaters and nonwastewaters, and for U051 and U052 the commenter is referring to nonwastewaters). For the halogenated organics, (U076, U077, U078, U080, U210, U226, and U228), U051, and U052, EPA is finalizing concentration standards based on incineration. This standard does not require incineration as a method. Provided that fuel substitution facilities not be engaged in sham recycling, and comply with other applicable regulations (e.g. State, RCRA, and Clean Air Act permits), and can meet the BDAT concentration standard, reuse as fuel facilities are not prohibited from burning U076, U077, U078, U080, U210, U226, and U228 wastewaters and nonwastewaters and U051 and U052 nonwastewaters as fuel. For aromatics and other hydrocarbons (U019, U055, U056, and U186), EPA is promulgating incineration as a method. EPA has determined that only incineration units complying with 40 CFR 264 Subpart O or 265 Subpart O can ensure that wastes which cannot be analyzed in treatment residues are being treated to BDAT. Consequently EPA has not included fuel burning capacity in the available capacity estimate for U019, U055, U056, and U186.

In addition to requesting that the Agency allow fuel substitution for certain U waste codes, Nortru also mentioned that many D002 and D004 through D011 characteristic wastes that exhibit the D001 characteristic are amenable to fuel substitution. In the final rule EPA is allowing fuel substitution for D001 wastes. Fuel substitution is allowed for the D001 ignitable characteristic, however, a waste stream may require further treatment for other characteristic wastes (e.g., EP toxic metal levels).

Nortru also indicated that EPA neglected available capacity to blend viscous sludges and solids into atomizable fuel products. Nortru specifically referenced technological advancement in solids fuel blending by Petro-Chem. EPA acknowledges that Petro-Chem is one of many commercial facilities that offers sludge/solid fuel blending. EPA has determined that sludge/solid fuel blending capacity exceeds commercial sludge/solid fuel burning capacity by a significant margin (maximum 1988 sludge/solid blending capacity exceeded 300,000 tons per year according to TSDR Survey responses). While EPA acknowledges that fuel blenders are important to the accumulation, blending, and distribution of wastes; hazardous fuel burners provide the actual treatment for wastes managed in this manner. EPA has determined maximum sludge/solid fuel burning capacity to be 78,000 tons per year, including newly identified capacity at Ash Grove's cement kilns. This capacity was included in EPA's analysis of available alternative treatment capacity to treat wastes for which concentration standards based on incineration are being promulgated.

Comments:

The comments indicating that EPA underestimated available combustion capacity estimate are presented in the following order:

- Hazardous Waste Treatment Council (HWTC) (33);
- Themalkem (110);
- Rollins Environmental Services (124);
- Ash Grove Cement (171);
- HWTC (172);
- ENSCO (188); and
- Nortru, Inc (241).

Docket Number: LD12-00033

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

The HWTC conducted a recent survey amongst its incineration companies to determine available capacity for D001 solids and sludges which EPA has proposed a capacity variance in the Third-Thirds proposed rule. Available capacity was determined based on unutilized capacity, and capacity being utilized to destroy non-hazardous waste. The combined available capacity for D001 solids and sludges for May 9, 1990 is 18.4 million gallons per year. This is far in excess of the required 12 million gallons/year capacity estimated in the Docket LD12 for the Third Thirds. It is therefore the HWTC's position that this capacity variance is not necessary.

Docket Number: LD12-00110

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment:

2. D001 Solids and Sludges

ThermalKEM does not agree with the proposed capacity variance for D001 solids and sludges. Our available capacity alone is sufficient to satisfy 15% of the required capacity. The TSDR survey, as reported in the Third Thirds docket (Document No. LD12-1007A) underestimates our capacity by almost a factor of 10. The difference is due to additional capacity demonstrated following a trial burn conducted and approved following the 1987 TSDR survey.

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Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Comment:

1. Data Omission

The capacity data utilized by EPA in making its capacity analysis for D001 (and other wastes) is presented in the Background Document, "Commercial, Treatment/Recovery Capacity Data Set", prepared by Versar, Inc., November, 1989, and Document LD12, "Third Third Waste Volumes, Characteristics and Required Available Treatment Capacity".

Table 3 of the latter document (Volume I, p. E-13) summarizes the 1989 available capacity for combustion of solids and sludges, and the claims against that capacity prior to the third third regulation, as follows:

		Millions of gallons per year
1989 available capacity		44
Less:		
Solvents	23	
California List HOCs	<1	
First Third	8	
Second Third	9	
Subtotal		40
Capacity remaining for 3rd 3rd		4

Against this remaining capacity of 4 million gallons/year, the document indicates (Volume III, Appendix D, pp. D-11 and D-12) a required capacity for the combustion of third third sludges and solids as follows (in millions of gallons):

	D001	All Other	Total
Sludges	6.9	1.4	8.3
Solids	5.8	4.0	9.8
Total	12.7	5.4	18.1

EPA indicates that the 4.0 million gallons/year (MG/Y) remaining capacity is adequate for all other (non-D001) wastes needing combustion of solids and sludges (Preamble, p. 48475), presumably because a capacity variance is being provided for multi-source leachate and contaminated soils. However, EPA asserts that no capacity remains for the 12.7 MG/Y required for D001 sludges and solids (ibid.).

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Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Comment:

1. Data Omission

The capacity data utilized by EPA in making its capacity analysis for D001 (and other wastes) is presented in the Background Document, "Commercial, Treatment/Recovery Capacity Data Set", prepared by Versar, Inc., November, 1989, and Document LD12, "Third Third Waste Volumes, Characteristics and Required Available Treatment Capacity".

Table 3 of the latter document (Volume I, p. E-13) summarizes the 1989 available capacity for combustion of solids and sludges, and the claims against that capacity prior to the third third regulation, as follows:

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Against this remaining capacity of 4 million gallons/year, the document indicates (Volume III, Appendix D, pp. D-11 and D-12) a required capacity for the combustion of third third sludges and solids as follows (in millions of gallons):

	D001	All Other	Total
Sludges	6.9	1.4	8.3
Solids	5.8	4.0	9.8
Total	12.7	5.4	18.1

EPA indicates that the 4.0 million gallons/year (MG/Y) remaining capacity is adequate for all other (non-D001) wastes needing combustion of solids and sludges (Preamble, p. 48475), presumably because a capacity variance is being provided for multi-source leachate and contaminated soils. However, EPA asserts that no capacity remains for the 12.7 MG/Y required for D001 sludges and solids (ibid.).

Docket Number: LD12-00124 (continued)

Commenter: Rollins Environmental Services (DE) Inc.

Comment: (continued)

PERMIT NO. HW-50089-001

CONTINUATION SHEET 30 OF ...

NAME: Rollins Environmental Services (TX)

TABLE III-2

Incinerator Train II
Operating Parameters

	Kiln No. 2	Rotary Reactor No. 2	Afterburner No. 2
Maximum heat input, MM BTU/hr	120	33.5	N.A.
Maximum waste feedrates, lbs/hr	12,000	12,000	8,000
Minimum combustion gas exit temperature, °F	1,500	1,200	1,800
Maximum combustion gas temperature upset limit, °F	1,500	1,200	1,800
Maximum volumetric flow rate, acfm (wet)	N.A.	N.A.	60,000
Maximum combustion zone pressure	Atmospheric	Negative relative to seal pressure	Atmospheric
rotational speed, rpm	3 (max)	6	N.A.
Minimum combustion gas O_2 concentration, wet basis	N.A.	N.A.	5.0% (1-hr rolling avg) 3.0% (instantaneous)
Maximum combustion gas CO concentration, wet basis	N.A.	N.A.	100
Maximum combustion gas CO concentration upset limit, wet basis	N.A.	N.A.	500

Docket Number: LD12-00171

Commenter: Ash Grove Cement Company

Comment:

Our fundamental concern with the November 22 proposal is that for many waste streams, EPA has specified "incineration" to the exclusion of "fuel substitution" as BDAT. EPA proposed this despite EPA's clear recognition in the November 22 proposal that wastes' energy value should be fully utilized because of a "fundamental RCRA goal of encouraging recovery of energy from wastes (RCRA section 1002(d)." 54 Fed. Reg. 48422. Before turning to the specific waste streams of concern, we will provide some general background information.

Background on Superiority of Cement Kiln Burning

EPA has stressed that cement kilns are "ideally suited" devices for the safe and effective recovery of energy from massive volumes of hazardous waste. 52 Fed. Reg. 16986, May 6, 1987. Well-documented stack testing and continuous emission monitoring data (see below) show that cement kilns control emissions more effectively than commercial hazardous waste incinerators.

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

As there are great concerns about capacity throughout the U.S. to handle "land-banned" hazardous waste, we urge EPA to structure its policies and regulations so as not to impede the fullest use of this environmentally-sound technology. Moreover, as EPA has noted, undue restrictions on energy recovery contravene one of RCRA's fundamental purposes.

We are attaching certain documents for your convenience which bear upon these points:

Attachment A -- Vast quantities (now over 200 million gallons per annum) of HWF are now being burned in cement kilns throughout the U.S. Attachment A shows the names of the companies and the kilns' locations, and indicates those kilns now burning "solid" (non-pumpable) as well as liquid HWF.

Attachment B -- While Ash Grove and Cadence have long been involved with liquid HWF, Attachment A shows that many other companies now handle liquid HWF and the national marketing system has entered a "commodity-like" phase. Ash Grove and Cadence have, however, recently patented an effective method to recover energy from solid HWF. Attachment B describes cement kiln operations and the Cadence system in general, and focuses particularly on the solids program which is in full-scale operation in three states.

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

Attachment C -- This attachment (from our patent) presents a detailed description of the solid HWF process developed by Ash Grove and Cadence.

Attachment D -- This attachment explains why cement kiln burning is so effective and why it is superior to commercial incinerator burning.

Attachments E through H -- These attachments present data from various stack tests and continuous emission monitoring from our kilns. These data show that our kilns are easily capable of meeting all emission limitations now being considered by EPA for industrial furnaces and incinerators.

Problems with Proposal

Overall, we believe EPA has failed to include "fuel substitution" along with "incineration" in far too many situations. Unless EPA provides more opportunities for fuel substitution in the final rule, the rule will have the effect of significantly limiting the opportunities for cement kilns to recover energy. We believe there can be no rational basis for EPA to effect such a result, for EPA's own data and our submitted data show cement kilns are just as effective as (in

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Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

fact more effective than) incinerators as a treatment technology.

There are two basic reasons why the proposal would unduly restrict valid energy recovery operations in cement kilns. First, EPA designated only a few streams beyond D001 as acceptable for fuel substitution, even though many others are amenable to valid energy recovery in many situations. While it is not entirely clear from the preamble (and we have found nothing in the record to support the choices), EPA seems to hav based its choices on a subjective determination that some waste codes are more amenable to valid energy recovery than others.

We believe this to be an inappropriate and unworkable method to restrict streams from energy recovery use. For instance, many "as generated" waste streams with high Btu value may actually be a combination of constituents with different codes, and the stream will carry these several codes. Just because EPA believes that a particular coded constituent in isolation would not be used as fuel does not mean that a generated waste stream containing that constituent along with other constituents is not a valid fuel. Yet EPA's proposal would stop that stream from being used for energy recovery.

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Commenter: Ash Grove Cement Company

Comment: (continued)

Moreover, certain types of coded constituents may be valid candidates for energy recovery in some matrices and not in others. These points help demonstrate -- as we explain further below -- why EPA should not use a land ban rulemaking to decide what is appropriate for energy recovery and what is not. Such decisions can rationally be made only on a case-by-case basis and EPA has policies firmly in place to accomplish this.

Second, there is a problem for many streams because of EPA's "waste code carry through" policies. Note from Attachment B that in the Cadence system, professional T/S/D blenders stand between generators and the cement kilns to assure that the kilns receive valid fuels carefully blended to specification.

As this system operates, generators' streams come into the processor's facility with the waste codes the generators have chosen to include in the manifest. Understandably, generators are often quite conservative about their coding. If there is any doubt that a code is called for, they will include it. If a particular piece of process equipment might ever have come in contact with a constituent carrying a certain waste code, they will include that waste code (and probably dozens of others) when they manifest the waste stream generated from the equipment.

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Commenter: Ash Grove Cement Company

Comment: (continued)

The net effect is that very often, a waste stream will enter a processor's facility carrying a particular waste code when in truth you couldn't find the coded waste in the stream if you analyzed for it. When a blender receives such a stream, and it carries a waste code specified as "incineration only," the blender is stuck. For in manifesting blends he will send to the kiln, the blender must include all listed codes that went into the blend. Again, the carry-through principle applies even if the coded waste isn't really there (which it often is not).

Effect of Proposal and Suggested Solution

For the last few years, we have been engaging in bona fide energy recovery using waste streams (or at least their codes) that would be prohibited from fuel substitution use under the proposal. Yet EPA's data and our data show that this waste has been treated just as effectively or more effectively at our kilns than at commercial incinerators. The supreme irony is that under the proposed rule, EPA would impose significant limitations on the use of the better technology.

To remedy this irrational approach, we urge EPA to specify fuel substitution (or at least fuel substitution in cement kilns) for each stream that it has specified incineration and/or thermal destruction. (We note that is it unclear to us whether

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Commenter: Ash Grove Cement Company

Comment: (continued)

EPA intended "thermal destruction" to include burning for fue substitution. EPA should specify that fuel substitution may an appropriate method for thermal destruction.)

If EPA has concerns that streams carrying certain codes would not properly be amenable to energy recovery in some situations, the land ban is not the mechanism to address thes concerns. Since 1983, EPA has maintained (and constantly reiterated) its "Sham Recycling Policy." Quite properly, thi is a "policy" -- not a rule -- to be used for fact-specific situations on a case-by-case basis. Under this Policy, state and regional officials have been effective in assuring that o valid energy recovery materials are being burned in our cemen kilns.

The land ban program is designed to assure that generate wastes receive the best possible treatment. There is no plac in the land ban regulations, therefore, for provisions which will frustrate that goal. The Sham Recycling Policy will certainly continue in effect after the land ban becomes final and the system can continue working as it has in the past to assure that our kilns burn hazardous waste for bona fide ener recovery.

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

EPA may be concerned that persons might construe a "fuel substitution" designation on a code as signalling an EPA approval that streams carrying that code are in all situations appropriate for energy recovery. If this is a problem for EPA, we suggest that EPA make very clear in the body of the rule (with an appropriate cross-reference with each code-specific designation) that the fuel substitution designation is not intended to imply a judgment by EPA that a stream carrying that code is an appropriate candidate for valid energy recovery. Rather, EPA could explain, the Sham Recycling Policy is still in effect and it will be up to generators, transporters, blenders, and burners in each case to assure compliance. EPA should also make sure, of course, that this qualification expires at the same time the Sham Recycling Policy terminates.

OTHER COMMENTS

1. In the next year, EPA plans to issue final regulations covering the burning of hazardous wastes in boilers and furnaces. EPA's intent is to make these regulations equivalent to regulations for hazardous waste incinerators.

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

At some time in the future, therefore, kilns burning for energy recovery will be regulated under the same RCRA regime as incinerators. At that time, we presume there would be no further validity whatever to BDAT distinctions between "incineration" and "fuel substitution." There may be some confusion on this point as the proposal is drafted, so we urge EPA to make this point quite clear within the body of the final rule (not just the preamble, which does not get codified in C.F.R. for posterity). The land disposal rules should state that at the time the final boiler/furnace rule is issued, fuel substitution is equivalent to incineration for BDAT purposes.

2. At page 48407, column 3, there is a sentence that perplexes us. After noting that certain streams may be burned in fuel substitution units, EPA states: "The Agency points out that all facilities incinerating these wastes must comply with 40 CFR 264 Subpart O or 265 Subpart O."

With respect to units burning for valid energy recovery, this statement is incorrect. Until EPA's long-awaited boiler and furnace regulations are finally issued (presumably late this year or early 1991) and effective, units burning for valid energy recovery are not subject to Subpart O.

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Commenter: Ash Grove Cement Company

Comment: (continued)

3. For all the foregoing reasons, in proposed §268.42(a)(5), the reference to Subpart O should be deleted and fuel substitution should be specified along with incineration.

4. We disagree with EPA's proposal to grant national capacity variances for certain wastes. First, EPA proposes a two year variance for certain "nonatomizable" sludges and solids (54 Fed. Reg. 48475) on the basis that there is not adequate combustion capacity. In fact, as pointed out in Attachment B, Ash Grove and Cadence have recently patented an effective method to recover energy from nonatomizable solids. This patented solids energy recovery program is in full scale operation in three states -- accounting for 90,000 tons of annual capacity -- and is available for use by any other cement kiln. EPA has considered the availability of "ample treatment capacity in liquid injection furnaces, and in boilers and industrial furnaces" (54 Fed. Reg. 46474, column 3) in deciding not to extend the variance to atomizable solids. The availability of ample cement kiln capacity for nonatomizable solids likewise eliminates the need for any variance for these wastes.

EPA has also proposed a two year national capacity variance for soil and debris contaminated by First, Second, and Third Third wastes for which treatment standards are based on soil

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

incineration. 54 Fed. Reg. 48489. Again, as discussed above and in Attachment B, cement kilns are capable and available t burn soil and debris contaminated with such wastes, which oft have sufficient Btu for energy recovery. When cement kilns a considered, adequate capacity exists and no variance is justified.

Docket Number: LD12-00171 (continued)

Commenter: Ash Grove Cement Company

Comment: (continued)

U.S. Kilns Burning Hazardous Waste Fuel

Company	Location (s)	Type of Kilns
Ash Grove Cement	*Foreman, AR *Chanute, KS *Louisville, NE	cement
Continental Cement Co.	Hannibal, MO	cement
Coplay Cement Co.	Logansport, IN	cement
Dundee Cement Co.	Clarksville, MO Santee, SC	cement
Environmental Conservation Systems Inc. (Solite Corp.)	Brooks, KY	lightweight aggregate
Giant Cement Co.	Harleyville, S.C.	cement
Gifford-Hill Cement Co.	Midlothian, TX	cement
Keystone Cement Co.	Bath, PA	cement
Lafarge Corp.	Demopolis, AL Fredonia, KS Alpena, MI Paulding, OH	cement
Lone Star Industries Inc.	Greencastle, IN	cement
Medusa Cement Co.	Wampum, PA	cement
National Cement Co.	Lebec, CA	cement
Norlite Corp.	Cohoes, NY	lightweight aggregate
Oldover Corp. (Solite Corp.)	Green Cove Springs, FL Norwood, NC Arvonia, VA	lightweight aggregate
River Cement Co.	Festus, MO	cement
Southdown, Inc.	Fairborn, OH	cement
Texas Industries	Midlothian, TX	cement

Kilns marked with an (*) are burning solid HWF as well as liquids. All others are burning liquids only.

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

A. D001 - Capacity Variance For D001 Non-Atomizable Sludges And Solids

1. Overview

The HWTC strongly believes that the capacity variance proposed for non-atomizable D001 sludges and solids is unjustified, unwarranted, and illegal.

The basis for the proposed variance is presented by EPA as being inadequate "combustion" capacity (Preamble pp. 48474-5). We presume, in this context, that "combustion" is intended to encompass the proposed treatment methods for D001 sludges and solids (pp. 48422), i.e., incineration, and deactivation by incineration.

As demonstrated below, we believe adequate capacity exists to treat D001 sludges and solids by incineration. In summary, our reasons are:

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Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

- EPA's capacity data set omits at least one existing, operating, Part B permitted Subpart O incinerator, the permitted capacity of which covers almost all of EPA's calculated capacity shortfall;
- EPA has arbitrarily excluded from consideration any and all capacity estimated to come on line in 1990, even though the regulation will not be effective until the second third of the year;
- EPA has arbitrarily, improperly and illegally assumed that non-hazardous waste being treated by incineration should have priority over hazardous D001 sludges and solids.
- The TSDR survey conducted in 1987 and based on 1986 data is outdated in that it does not take into account capacity that become available as a result of trial burns conducted after 1986 that allowed for permitting of higher feed rates. Two HWTC member companies have justified a minimum of twice the capacity indicated in the TSDR survey for solids and sludges.

The HWTC has submitted the data already that accounts for each of these factors. This information was submitted on December 22, 1989, in accordance with EPA's requirement for early data comments submittal. In total, HWTC members have 18.4 million gallons per year available capacity for D001 solids and sludges, more than sufficient to satisfy the required capacity of 12 million gallons per year.

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

The data set EPA used in developing its capacity estimates, however, omits a major hazardous waste (Subpart O) combustion unit which has been in operation for more than a year and has a Part B permit.

More specifically, the "Commercial Treatment/Recovery Data Set" identifies each unit which is included in the capacity calculations, indicating the facility name, EPA ID Number, number and types of units and their thermal ratings and waste feed capabilities. The listing for Rollins Environmental Services (TX), Inc., Deer Park, Texas (Table 3-2, page 11, attached to these comments as Exhibit 1), totally omits the Rollins Rotary Reactor, a mechanically fluidized-bed rotary reactor. In fact, this unit, which is operating under a Part B permit by a subsidiary of a HWTC member company, was designed specifically for handling solids and sludges.

This unit's permitted capacity is 12,000 pounds/hour (page 50 of Part B Permit, attached as Exhibit 1 to these comments). Permitted emission levels are based on 92% on-line operations. For operating reasons, approximately 25% of the tonnage being fed to the incinerator is [illegible]mizable liquids. Utilizing these permitted capacity

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

per ton (LD 12, Volume III, p. 4-18), provide the following annual capacity:

Permitted hourly capacity: 12,000 pounds/hour
÷ 2,000 pounds = 6 tons/hour
X 24 hours = 144 tons/day
X 365 days = 52,560 tons/year
X 92% on-line = 48,355 tons/year capacity
X 75% solids/sludges = 36,266 tons/year capacity for solids/sludges
X 240 gallons = 8,703,900 gallons/year capacity for solids/sludges
Rounding to 8.7 MG/Y.

Thus, this omitted unit alone provides almost 70% of the capacity needed to meet EPA's estimated capacity shortfall of 12.7 MG/Y for D001 sludges and solids. It certainly provides much more than enough capacity to meet needs for either the solids or sludges.

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

TABLE III-2

Incinerator Train II
Operating Parameters

	Kiln No. 2	Rotary Reactor No. 2	Afterburner No. 2
Maximum heat input, MM BTU/hr	120	33.5	N.A.
Maximum Waste feedrates, lbs/hr.	12,000	12,000	8,000
Minimum combustion gas exit temperature, degrees Fahrenheit	1,500	1,200	1,800
Maximum combustion gas temperature upset limit, degrees Fahrenheit	1,500	1,200	1,800
Maximum volumetric flow rate, acfm (wet)	N.A.	N.A.	60,000
Maximum combustion zone pressure	Atmospheric	Negative relative to seal pressure	Atmospheric
Rotational speed, rpm	3 (max)	6	N.A.
Minimum combustion gas O_2 concentration, wet basis	N.A.	N.A.	5.0% (1-hr rolling avg) 3.0% (instantaneous)
Maximum combustion gas CO concentration, wet basis	N.A.	N.A.	100
Maximum combustion gas CO concentration upset limit, wet basis	N.A.	N.A.	500

Docket Number: LD12-00188

Commenter: Environmental Systems Company (ENSCO)

Comment:

G) CAPACITY EXTENTIONS GENERALLY/DOO1 SPECIFICALLY

We urge EPA to regularly reassesses the data used to determine proposed capacity extensions. In the Treatment Council's review of capacity data, they found several instances where major permitted and operating commercial facilities were not listed or counted in the capacity calculations. While we acknowledge the complexity of measuring this fast-changing universe of sites, we believe that additional resources should be devoted to this process.

Insofar as D001 is concerned, we believe that the Treatment Council's recently completed survey demonstrates that capacity is available to handle DOO1 ignitable solids and sludges.

Docket Number: LD12-00241

Commenter: Nortru, Inc.

Comment:

Nortru, Inc. ("Nortru"), through each of its affiliated operating companies; Petro-Chem Processing, Inc. ("Petro-Chem"), Solvent Distillers, Inc. ("SDI") and RTR, Inc. ("RTR"), offer the waste generators a variety of innovative recycling alternatives specifically designed to process, treat and recover many wastes which have, in the past, been directed to land disposal facilities or misdirected to incinerators. All of our companies have developed various processes to reduce the demand for unnecessary incineration or landfilling with emphasis on recycling and reuse.

Petro-Chem, through advanced fuel blending techniques, has pioneered major improvements in processing a variety of wastes, which include highly viscous and solid materials, into a useable fuel product.

SDI, through its distillation processes, has encouraged reuse of many reclaimable solvents without the need for landfilling or incineration.

RTR has eliminated the need to landfill many D001, F003 and F005 solids and paint waste sludges through a proprietary process recently made available to paint spray applicators. In the past, many of these solids and sludges have been diluted with other non-hazardous wastes and landfilled, thus avoiding the land disposal restrictions.

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

Throughout our many years of experience in recycling organic wastes, we have continued to develop and commercialize new technologies to further promote recycling to the waste community and provide more effective and economical means to safely handle such waste materials. Most recently Petro-Chem began operation of the Container Processing System ("CPS"). This system represents the most sophisticated means of handling containerized organic waste materials. The CPS is specifically designed to process a wide variety of containerized liquid, semi-liquid, semi-solid, highly viscous and solid waste streams (including labpacks) into useable fuel products. RTR in turn commissioned a new plant in February of 1989 dedicated to the recycling of an oil water emulsion saturated with paint sludges from paint spray applications. This plant is a "first" wherein bona fide recycling is conducted obviating the historic need for detackified sludges to be directed to landfills. We believe the technological advancements these companies have made over recent years have not been considered by the Agency when specifying BDAT for many of the waste streams addressed in this proposed rulemaking package.

1. We believe that the Agency has neglected the extensive capacity offered by fuel substitution for use by the cement kiln industry and distillation for the safe recycling of many of the waste streams (codes) covered

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

in this proposed rulemaking package. Advanced fuel blending techniques available today can acceptably process many of these waste codes into useable fuel products which can be safely consumed within many of our nation's cement kilns and industrial furnaces. The BDAT technology currently exists within the fuel substitution methodology to obviate any proposed capacity variances or need to incinerate, and where distillation is a viable alternative for "U" and "P" wastes it should be specified as an additional BDAT.

5. These proposed rules suggest inadequate capacity currently exists for certain sludges, solids and high viscosity materials which cannot be atomized for fuel substitution. Petro-Chem currently operates equipment designed specifically to process these types of wastes into useable fuel products. We do not believe that a capacity variance is required or warranted for these wastes because such technology currently exists.

1) In the Third Third proposed rules the Agency has neglected thermal treatment by fuel substitution as an alternative for treating many of the wastes covered by this proposal. The Agency has excluded, for instance, many "U", "P" and "K" wastes that are now amenable to, and are currently being fuel blended. Typical examples of materials which are amenable to fuel substitution are : U019, U051, U052, U055, U056, and

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

U186. In addition U076, U077, U078, U080, U210, U226, and U228 are all distillable materials which can be beneficially recovered without the need for incineration.

The Agency states the following reasons for the exclusion of fuel substitution as acceptable thermal destruction of these wastes:

> "Due to the high concentration of specific, identified halogenated organics known or anticipate to be present in these U and P off-spec chemicals; the relatively high toxicity of some of the pesticides and miscellaneous halogenated organics; the anticipated low fuel value of these U and P wastes; and the need to control HCl emissions from the destruction of halogenated organics, the Agency does not believe that fuel substitution is a viable alternative for the majority of specific U and P waste codes identified in this section" (54 FR 48392);

and,

> "Since many of these nonhalogenated chemicals represented by these U and P waste codes generally have reasonably high BTU value (e.g., the aromatics and polynuclear aromatics) and since U and P wastes are typically off-specification or discarded products, they might be expected to be well suited for fuel substitution purposes. However, despite this fuel value and the fact

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Commenter: Nortru, Inc.

Comment: (continued)

> that these compounds consist primarily of hydrogen and carbon, many of these wastes may be considered unacceptable for fuel substitution due to their relatively high toxicity and acid formation capability (due incineration). In addition it appears that there is sufficient capacity to accommodate these wastes, so that the use of fuel substitution capacity is not needed to avoid granting a national capacity variance for these wastes. It also appears that only oxygenated hydrocarbons and heterocyclics (seventeen of the eighty two U and P nonhalogenated wastes) are likely candidates for fuel substitutes. The Agency does not believe that fuel substitution is a viable alternative for the majority (65) of the specific U and P waste codes identified in this section" (54 FR 48407).

We believe that many D002 and D004 through D011 characteristic wastes are also amenable to fuel substitution when they also exhibit a D001 characteristic.

We further believe the Agency is in error asserting that an incinerator will handle these wastes with any greater efficiency or safety than that which is provided by cement kilns. The Agency has recognized as recently as October 26, 1989 in the proposed rules entitled, "Burning of Hazardous Waste in Boilers and Industrial Furnaces; Supplement to Proposed Rule" (54 FR 43718) that:

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

> "It is EPA's intention to make the standards for burning hazardous waste as uniform as possible given that the potential risks posed are similar irrespective of the type of combustion device" (54 FR 43719).

The Agency is also proposing (54 FR 43736) to rescind the "Sham Recycling Policy" (48 FR 11157). This would allow many wastes subject to the Third Third proposed rules, both nonwastewaters and wastewaters, "F" aqueous wastes and multisource leachate with lower than 5,000 BTU per pound, to be fuel blended and effectively treated. We believe that fuel blenders and any cement kilns which have received their Part B permit are fully capable of handling these waste safely and efficiently.

We request that the Agency further review the apparent dichotomies in the following:

1) Is it now the Agency's opinion that an incinerator can handle wastes that have "high toxicity" and "acid formation capability" any more effectively than industrial furnaces or particularly cement kilns where the composition of the material and the cement manufacturing process intrinsically neutralizes many of these wastes?

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

2) Because it is the Agency's intent to equivalently regulate industrial furnaces to incinerators, will there still be a difference between incineration and fuel substitution as a means of thermal treatment as pertains to the technology based treatment standards?

3) What is the rationale for ignoring the mandate given to the Agency in RCRA Sec. 1002 which encourages energy recovery?

We would suggest that the Agency broaden the scope of those wastes that may be treated by fuel substitution to include any wastes that can currently be incinerated as these two treatment options are essentially equivalent.

As stated in our discussion to item 1, we request that the Agency reevaluate those wastes that may be amenable to fuel substitution and further specify fuel substitution wherever incineration is being specified as BDAT, as many of these wastes are identifiable in streams that are currently fuel blended. Failing such would further exacerbate our nations already short supply of incineration capacity for highly toxic materials or for non-fuel blending materials.

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Commenter: Nortru, Inc.

Comment: (continued)

5) In regard to the capacity variances that the Agency is proposing to allow for combustible sludges and solid wastes and high viscosity material that have been described by the Agency as "non-atomizable" (see Table III.B.1.(c)) we believe the assumptions made and the data analyzed in support of such a determination are in substantial error. We would like to bring to your attention the following.

1) In regard to solids (non-pumpable), many TSDF (fuel processors) have installed and engineered sophisticated systems which permit BTU containing solids to be liquefied into pumpable and atomizable liquids. This methodology offers a most economical alternative to incineration for the generator while achieving the desired benefits of energy recovery. To preclude non-pumpable solids from being beneficially recovered but rather directed towards incineration is based on fallacious data. The data which we believe has formed the basis for the Agency's determination is woefully outdated and neglects major and recent technological advances within the industry. Since 1985 Petro-Chem has employed technology which can effectively process solids, sludges, and high viscosity materials into an atomizable fuel product. With the addition of our new Container Processing System discussed earlier, our treatment capacity for these materials alone could achieve 25

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

million gallons per year, or approximately 50% of the required capacity identified in Table III.B.1.(c). And within six months (mid-1990) could have in operation adequate treatment capability to handle over 52.7 million gallons per year. Further, we also are aware of other firms throughout the nation which operate similar, albeit less efficient, treatment processes capable of treating similar materials. Petro-Chem's Container Processing System was developed in the past two years in direct response to the mandate given within the 1984 HSWA amendments that not only encourages, but fosters the development and growth of new technology to minimize the need for additional land disposal capacity. Further, in light of such existing treatment capability, the need for a national capacity variance is certainly not warranted!

2) The Agency has recognized the use of solid waste derived fuel in cement kilns as an effective means of thermal treatment (destruction).

> "The Agency is aware that several cement companies are investigating the feasibility of feeding solid waste into cement kilns and some facilities are already engaging in the practice ..." (54 FR 43727).

Docket Number: LD12-00241 (continued)

Commenter: Nortru, Inc.

Comment: (continued)

As stated in the submission on behalf of Cadence et. al., solid fuels are successfully being consumed by cement kilns. In addition, our experience using new processing technology has permitted solids to be liquefied (atomizable) at rates approaching 80% efficiency.

Given the above, we request that the Agency remove the 2 year national capacity variance for those materials that are amenable to fuel substitution and particularly for combustible sludges and solids.

Petro-Chem has designed and commissioned an automated containe handling system which can in a controlled environment, VOC capture minimize employee exposure, handle a broad range of materials (eg. liquid, highly viscous, solid, etc.) by preferentially producing a homogenous and pumpable mixture of liquid/solids. Non liquefiable solids are also handled and made amenable for fue substitution by a Cadence outlet.

Technology for handling materials of various physical states as generated is available at high commercial treatment rates at legitimate fuel blending (TSDRF) facilities. These facilities eg., fuel blenders, operating under TSDRF authorities can and do meaningful processing so as to make a broad range of waste materials amenable for fuel substitution. This is done in a manner consistent with protection of health, safety and the environment.

The effective utilization of these types of materials in a cement kiln is already an established fact.

2.3 EPA Over-Estimated Available Combustion Capacity

Summary:

Four commenters (CH2M-HILL (173), Dupont (189), Sterling Chemicals (197), and Merck & Co., Inc (242)) indicated that EPA over-estimated available combustion capacity. CH2M-HILL (173) and Dupont (189) indicated that the Agency may have over-estimated available sludge/solids incineration capacity. Merck & Co., Inc (242) questioned available capacity if the proposed boiler and industrial furnace rule goes final, and Sterling Chemicals (197) indicated that the Agency over-estimated available capacity for liquid incineration.

CH2M-HILL (173) and Dupont (189) stated that the Agency had over-estimated available capacity. Both CH2M-HILL (173) and Dupont (189) stated that EPA may have included in their available capacity estimate facilities that are unlikely to be available by May 1990. The facilities in question include: 1) Rollins, Baton Rouge facility, 2) Alchem-Tron, 3) Chemical Waste Management, and 4) LWD in Calvert City, Kentucky. CH2M-HILL (173) and Dupont (189) indicated that EPA may have included capacity from the second kiln at the Rollins facility in the available capacity estimate. CH2M-HILL and Dupont believe that this facility will be unavailable until 1991-1992. In addition to the Rollins reactor, both CH2M-HILL (173) and Dupont (189) stated that the Alchem-Tron facility, which is listed in the background document as currently burning, has not yet received a State permit and is not burning waste. CH2M-HILL (173) and Dupont (189) also received notification from Chemical Waste Management that full scale operation will be delayed until final resolution of a no-migration petition. Capacity for the Chemical Waste Management facility is approximately 12 million gallons per year. CH2M-HILL (173) and Dupont (189) also noted that public reports indicate that the permit process for the second kiln at the LWD facility has been delayed; consequently this facility will likely not open by May, 1990.

Dupont (189) stated that EPA may have over-estimated available capacity because cement kiln facilities over-estimate the quantity of waste they can burn. Dupont (189) agrees with the Agency's determination that the ability to feed wastes into the kiln or boiler at fuel reuse facilities limits the amount of capacity available for sludges and solids through reuse as fuel. According to Dupont, few facilities have the capability to prepare solids and sludges to be fed to a boiler or kiln. Dupont believes that the demand for fuel blending and other preparation steps at combustion facilities is high because economic considerations prevent generators from preparing sludges and solids to an atomizable form before transport. Due to the lack of waste preparation capabilities at most fuel reuse facilities, Dupont believes that facilities are over-estimating available capacity, and therefore the increase from 8 million gallons to 43 million gallons between 1988 and 1990 is highly unlikely. According to Dupont, EPA did not consider fuel blending capabilities when determining available capacity at reuse as fuel facilities; consequently, Dupont (189) requested that EPA re-evaluate available capacity.

Merck & Co., Inc. (242) indicated that if the boiler and industrial furnace rule were to go final in the coming year, the feed rate and emission rate restrictions would limit available combustion capacity. According to Merck & Co., Inc. (242), the Agency has stated that some boilers and furnaces will discontinue reusing hazardous waste as fuel in order to avoid the RCRA permitting process. If this scenario were to occur, available capacity would be reduced even further.

Sterling Chemicals (197) indicated that the Agency over-estimated liquid incineration capacity. According to Sterling Chemicals (197), EPA's estimate ignores the following: 1) storage capacity at generating and treatment sites, 2) transportation to treatment sites, 3) the need to modify facilities required to store and transport non-hazardous wastewater to new storage facilities, and 4) the need to modify permits.

Response:

EPA agrees that capacity from the second kiln at the Rollins facility in Baton Rouge and the Alchem-Tron facility should not be included in the available capacity estimate. The second kiln at the Rollins facility in Baton Rouge is a planned facility and is not expected to come on-line before 1993. Due to state permit delays, Alchem-Tron's facility in Cleveland, Ohio is not expected to come on-line until 1991. The Chemical Waste Management Port Arthur facility is currently operating at about 85 percent capacity, but will be forced to stop operating when it can no longer dispose of its scrubber water in its underground injection well because of promulgated Third Third rule treatment standards. There should be final Agency action on this petition within the next six weeks. The two rotary kilns at the LWD facility in Calvert City, Kentucky are currently operating under interim status. However, the state has published an intent to deny a final permit to the facility and LWD has appealed the denial. Since the facility will continue operating under interim status during the appeal, EPA has included capacity from this facility in the available capacity estimate.

EPA has reevaluated sludge/solid combustion capacity, including capacity provided by cement kilns. Based on this analysis, the Agency has determined that 41 million gallons of sludge/solid combustion capacity is currently available to treat Third Third regulated wastes and another 87 million gallons will be available by the end of 1990. The breakdown of this volume between incinerators and cement kilns can be found in the Background Document For Third Third Wastes To Support 40 CFR Part 268 Land Disposal Restrictions, Final Rule. With respect to the increase in available capacity between 1988 and 1990, the Agency did not use the 1989/1990 volumes reported in TSDR Survey responses without first verifying the data. EPA contacted EPA regional and state officials to update or verify the activities of each RAF facility in the TSDR Capacity Data Set reported as having sludge/solid capacity in either 1988 or 1989/90. EPA is aware that certain wastes, especially viscous sludges and solids, may require blending prior to being fed to combustion units. EPA is also aware that blending process components may require permits (though many operating today are doing so under interim status standards for storage). EPA has determined that the blending capacity of commercial blenders alone greatly exceeds sludge/solid fuel burning capacity, and consequently does not limit available capacity for sludges and solids being burned as fuel. EPA is also aware that current sham recycling policy guidelines normally use minimum waste fuel heating values of 5000 to 8000 BTU/lb. EPA has concluded that many of the primarily organic wastes for which concentration standards based on incineration are being promulgated have heating values above the sham recycling minimum limits as generated. As previously mentioned, EPA acknowledges that blending is often required to render certain wastes amenable to use as fuel. EPA is also aware that commercial sludge/solid fuel blending capacity far exceeds burner capacity, and that some fuel burners are able to burn sludges and solids without preparing them to atomizable form. If economic considerations do not justify that generators prepare certain wastes to atomizable form, either of these two alternatives are available. If commercial blending or alternative sludge/solid combustion methods are not feasible, a third option would be incineration in a rotary kiln. EPA has no other indication that fuel blending capacity is in short supply, and the commenter did not supply specific data to show that fuel blending capacity is in short supply.

EPA plans to finalize rules for burning and blending hazardous waste in boilers and furnaces by the end of 1990. These rules provide broad controls on burning and support activities comparable to proposed and existing requirements under Part 264 Subpart O for incinerators, with exceptions for small volume burners. Given the recent changes in burning practices, the incineration market, and the regulatory requirements since EPA's 1987 analysis of the rule's affects on capacity, the implications for combustion capacity of this rule are unclear. In its 1987 analyses, EPA concluded that at as many as 22 percent of the boilers and 14 percent of the furnace kilns could not burn hazardous waste as fuel as a result of these rules. This worst case scenario would displace capacity for 33 percent of the waste fuels burned, according to EPA's analysis. If such displacement were to occur, EPA has concluded that a large portion of these wastes would be burned at other on-site and company captive fuel burning units. This conclusion is based on the large capacity and relatively low utilization of such units reported in the TSDR Survey and the economic incentives of avoided waste disposal and conventional fuel costs. The potential impact of these rules is further mitigated by the fact that very few boilers and furnaces possess sludge/solid capacity, and sludge/solid disposal costs are generally higher than liquid disposal costs. These higher potentially avoided disposal costs provide a greater incentive for sludge/solid fuel burners to continue burning than the analogous incentive for liquids burners. Finally, EPA has determined that the few facilities who provide most of the sludge/solid fuel burning capacity are currently taking steps toward obtaining the permits that the proposed rule would require. As a result of these factors, EPA has concluded that the pending regulation of boilers and industrial furnaces who currently burn hazardous waste as fuel will have a negligible impact on available waste burning capacity, especially for sludge/solid capacity. Consequently, EPA has not changed its current capacity estimates.

EPA disagrees that the Agency over-estimated liquid incineration capacity because they did not take into consideration storage capacity at generating and treatment sites, transportation to treatment sites, the need to modify facilities required to store and transport non-hazardous wastewater to new storage facilities, and the need for any associated permit modifications when estimating available liquid incineration capacity. EPA is unaware of any situations where these concerns have limited available treatment capacity. As the commenter did not provide information on specific facilities, EPA is unable to pursue the commenter's specific concerns.

Comments:

The comments that EPA overestimated available combustion capacity estimate are presented in the following order:

- CH2M-HILL (173);
- Dupont (189);
- Sterling Chemicals (197); and
- Merck & Co., Inc. (242).

Docket Number: LD12-00173

Commenter: CH2M-HILL

Comment:

Determination of Incineration Capacity

Based on our study of the Capacity Background documents, it appears that the determination of a final capacity variance for leachate treatment residuals will be critically dependent upon EPA's assumptions about capacity for incineration of solids and sludges, particularly at three or four new or currently inactive incinerators. We urge EPA to conduct its own evaluation of the readiness and real capacity available at these facilities.

In conducting its reviews, EPA should consider the fact that the RCRA Part B permit is not the only obstacle to operation of hazardous waste incinerators. States and localities also impose requirements that these facilities must satisfy. It is not unusual for states to have separate air emissions permit requirements that must be satisfied in addition to RCRA permit requirements. In some cases, full-scale operation of the facility depends on ancillary features such as dewatering equipment, storage areas or deep injection wells, all of which have an approval process separate from the incinerator itself. EPA's evaluation should consider all requirements that could affect the timing or amount of capacity available at each facility.

Although it cannot be determined specifically from either the proposed rule or the background documents, it appears that EPA may be including as "available" some capacity that is, in fact, unlikely to be available by May 1990:

- Rollins, Baton Rouge: It is unclear if EPA has considered the second kiln at this facility to be available in the 1990 time frame. Table 3-2 in the Commercial Treatment/Recovery Capacity Data Set (November 1989) indicates that the second kiln will be delayed until 1991-1992; however, Table 3-3 shows a large increase in capacity available in the 1989-1990 time frame (some 36 million gallons of solid/sludge incineration) at that facility. We believe that the 1991-92 start-up date is more appropriate.

- Alchem-Tron, Cleveland: Table 3-2 indicates that this facility is "currently burning", and that the RCRA permit has been granted. Although the facility has received a RCRA permit from Region V, the state of Ohio has a separate permitting process for hazardous waste incinerators. Alchem-Tron has not yet completed the state permit process and is not burning waste at this time. It is not

Docket Number: LD12-00173 (continued)

Commenter: CH2M-HILL

Comment: (continued)

clear whether the facility will be operating by May 1990. The Alchem-Tron incinerator represents 9.3 million gallons of solid/sludge incineration capacity.

- Chemical Waste Management, Port Arthur, Texas: Information about this facility is classified as Confidential Business Information and therefore is not available for public review. We have, however, received information from Chemical Waste Management indicating that full-scale operation of this facility may be delayed because of inaction on an underground injection well no-migration petition. We believe the capacity of this facility will be approximately 12 million gallons/year for solids and sludges.
- LWD, Calvert City, Kentucky: Again, information about this facility is classified as Confidential. Earlier public reports, however, indicated that the permit process for the second kiln was lagging, and that start-up may be later than May 1990. We believe the capacity of this facility to be approximately 10.8 million gallons/year of solids/sludges.

Because each of these facilities represents a significant portion of the new solid/sludge incineration capacity needed to accommodate Third Third wastes, determining their real capacity and timing should be a priority for EPA.

Competition for Incineration Capacity

EPA's capacity methodology assumes that 100 percent of the solid/sludge incineration capacity is available for land banned wastes, either from Third Third or previous land ban rules. EPA should recognize that some currently non-banned (and even non-hazardous) wastes may pose a greater risk than many of the land banned wastes. These non-banned wastes warrant consideration in the allocation of scarce incineration capacity.

The need to consider non-banned wastes is particularly clear where there is the potential that assigning leachate treatment residuals to incineration would displace more toxic, non-land banned wastes. By definition, these are treatment residuals, not process wastes. Their toxicity and concentrations of hazardous constituents are considerably less than many non-hazardous wastestreams. We believe that there are numerous instances where non-hazardous or non-land banned wastes are currently being incinerated. These wastes should continue to utilize scarce solids incineration capacity and not be displaced by leachate treatment residuals.

Docket Number: LD12-00189

Commenter: E.I. DuPont De Nemours & Company

Comment:

A. DU PONT REQUESTS THAT EPA UPDATE/CONDUCT ITS OWN INDEPENDENT ANALYSIS OF THE AVAILABILITY OF TREATMENT CAPACITY FOR LEACHATE TREATMENT RESIDUALS

Based on our review of the Capacity Background Documents for this "Third-Third" proposal, it appears that the determination of a final capacity variance for leachate treatment residuals will be critically dependent upon EPA's assumptions regarding capacity for incineration of solids and sludges. This will be particularly important for the three or four new or currently inactive incinerators that reportedly may be available by May 8, 1990. Du Pont urges the Agency to conduct and/or update its own evaluation of the readiness and "real" capacity availability as of May 8, 1990 at these facilities.

In conducting its reviews, EPA should consider the fact that the RCRA Part B permit for these facilities is not the only obstacle to operation of hazardous waste incinerators. States and localities also impose requirements that these facilities must satisfy. For example, it is not unusual for states to have separate air emissions permit requirements that must be satisified in addition to the RCRA Part B permit requirements. In some cases, full scale operation of the facility depends on ancillary features such as dewatering equipment, storage areas or underground injection wells that require regulatory agency approval of the appropriate facilities totally separate from the incinerator. EPA's evaluation should consider all requirements that could affect the timing or amount of capacity available at each facility.

Although we are unable to determine site-specific information regarding capacity availability from either the proposed rule or the background documents, it appears that the Agency may be including as "available" some capacity that is, in our view, unlikely to be available by May 8, 1990.

- Rollins, Baton Rouge, LA -- It is unclear if EPA has considered the second kiln at this facility to be available in the 1990 timeframe. Table 3-2 in the Commercial Treatment/Recovery Capacity Data Set (November 1989) indicates that the second kiln will be delayed until 1991-1992. Table 3-3, however, shows a large increase in

Docket Number: LD12-00189 (continued)

Commenter: E.I. DuPont De Nemours & Company

Comment: (continued)

capacity available in the 1989-1990 timeframe (some 36 million gallons of solid/sludge incineration) at that facility. We believe that the 1991-1992 start-up date is more appropriate. Du Pont requests that EPA carefully evaluate whether the 36 million gallons of capacity will be available by May 8, 1990.

- Alchem-Tron, Cleveland, OH -- Table 3-2 of the Commercial Treatment/Recovery Capacity Data Set (November 1989) indicates that this facility is "currently burning" and that the RCRA permit has been granted. Although the facility has received a RCRA permit from EPA Region V, the State of Ohio has a separate permitting process for hazardous waste incinerators. Based on information available to Du Pont, we believe that Alchem-Tron has not yet completed the state permit process and is not burning waste at this time. It is not clear whether this facility will be operating by May of 1990. The Alchem-Tron incinerator represents 9.3 million gallons of solid/sludge incineration capacity. Du Pont requests that EPA reevaluate this facility and revise its calculations of the "capacity available" on May 8, 1990, if appropriate.

- Chemical Waste Management, Port Arthur, TX -- Information about this facility is classified as "Confidential Business Information", and therefore is not available for public review. We have, however, received information from Chemical Waste Management indicating that the full scale operation of this facility may be delayed because of inaction on an underground injection well "no migration" petition important to the operation of this incinerator. We believe that the capacity of this facility to be approximately 12 million gallons/year for solids and sludges. Du Pont requests that EPA reconfirm that this facility will be fully operational at the estimated solids capacity of 12 million gallons/year by May 8, 1990.

- LWD, Calvert City, KY -- Again, information about this facility is classified as "Confidential Business Information." Earlier public reports, however, indicated that the permit process for the second kiln was lagging, and that start up may be later than May 1990. We

Docket Number: LD12-00189 (continued)

Commenter: E.I. DuPont De Nemours & Company

Comment: (continued)

believe the capacity of this facility to be approximately 11 million gallons/year of solids/sludges. Du Pont also requests that the Agency specifically reconfirm that this facility will be on-line at its estimated capacity of 11 million gallons/year by May 8, 1990.

Du Pont submits that because each of these facilities represents a significant portion of the new solid/sludge incineration capacity needed to accommodate "Third-Third" wastes, detemining their "real" capacity and the timing of this capacity availability should be a major priority for EPA.

Docket Number: LD12-00189

Commenter: E.I. DuPont De Nemours & Company

Comment:

6. ESTIMATES OF FUEL REUSE CAPACITY FOR SOLIDS AND SLUDGES

A. DU PONT BELIEVES THAT FUEL REUSE FACILITIES MAY BE GREATLY OVERESTIMATING THE QUANTITY OF SOLIDS/SLUDGES THEY CAN BURN

EPA has appropriately recognized that the key factor limiting capacity at fuel reuse facilities is the ability to feed the waste into the kiln or boiler. Du Pont believes that this limitation severely restricts the amount of capacity now available for solids and sludges through fuel reuse.

Typically, solids and sludges destined for fuel reuse require extensive preparation, such as high-pressure filtration or drying, before they can be fed to a boiler or kiln. Few fuel reuse facilities now have this waste preparation capability. Furthermore, because these preparation processes often require permitting, they cannot be installed quickly.

Based on these limitations, the large increase in capacity for solids/sludges at fuel reuse facilities shown in Table 3-4 of the Commercial Treatment/Recovery Capacity Data Set (November 1989) -- from 8 million gallons/year in 1988 to 43 million gallons/year in 1989/90 -- seems unrealistic. The projected increase of 35 million gallons is, we believe, a function of the facilities' desire to treat these higher value wastes and should be carefully examined by EPA.

Docket Number: LD12-00189 (continued)

Commenter: E.I. DuPont De Nemours & Company

Comment: (continued)

BUT EPA SHOULD CONSIDER OTHER FACTORS IN DETERMINING CAPACITY FOR ATOMIZABLE SLUDGES

It is unclear from the proposal whether EPA has estimated the volumes of wastes that meet the definition of "atomizable sludges" as generated. However, it appears that EPA does contemplate additional processing of at least some of these sludges before they can be fed to the combustion unit. EPA specifically mentions that blending of high viscosity wastes with low viscosity wastes is a likely preparation step. However, the Agency should consider several limitations on these activities that come into play in practice.

First, as noted above, some preparation processes will require a permit even though the combustion unit itself does not. This could include the type of fuel blending that EPA contemplates.

Second, if the waste is destined for fuel reuse, the original, "as generated" wastes must satisfy the 5000-8000 BTU/lb requirement cited in EPA guidance to avoid being considered sham recycling.

Finally, the economics of waste disposal make it less likely that generators will prepare wastes to atomizable form before transport if it results in added volume and weight, since this could significantly increase costs. This may place added demand on combustion facilities to provide blending and other preparation steps. This capability is in short supply at present.

Docket Number: LD12-00197

Commenter: Sterling Chemicals

Comment:

The Agency estimates available liquid injection capacity for atomizable wastes to be approximately 249 million gallons per year. However, this estimate exaggerates capacity since treatment is only the final step. The estimate ignores storage capacity at the generating and treatment sites and transportation to the treatment site. The estimate also ignores the need to modify facilities to contain and transfer the non-hazardous wastewater to the new storage facilities, and the need for any associated permit modifications. These facilities and compliance activities will require substantial effort and time.

Docket Number: LD12-00242

Commenter: Merck & Co., Inc.

Comment:

Furthermore, it is quite possible that capacity will be even less in the coming year in light of the proposed boiler and industrial furnace rule. Ma ignitable wastes are treated in boilers and industrial furnaces. If the final rule is promulgated concurrently with the hazardous waste incinerator rule at the end of 1990, there will be even less capacity available as the materials that these units can handle be comes even more restricted due to feed rate and emission rate limitations. Furthermore, many units will have shutdown for retrofitting of control equipment and for trial burns. In fact EPA has stated that some boilers and industrial furnaces will cease to use hazardous waste as fuel so they will not have to go through the RCRA permitting process which will reduce the capacity even further.

2.4 EPA Did Not Include Capacity Scheduled To Come On-Line In The Future In The Available Capacity Estimate

Summary:

HWTC (172) indicated that the Agency, when determining available capacity, did not consider facilities scheduled to come on-line in the future. According to HWTC (172) EPA has excluded from their capacity analysis facilities scheduled to come on-line in 1990.

Response:

Based on comments and additional capacity data, EPA has revised the estimate of available incineration capacity. This updated estimate includes all facilities that are scheduled to be on-line by May 8, 1990. A complete listing of these facilities is presented in Exhibit 2-2. EPA first identified planned incineration capacity additions from the TSDR Data Set, commercially published literature, and internal expertise. EPA then contacted regional and state officials to verify whether facilities will have brought planned capacity on-line by May 8, 1990.

EXHIBIT 2–2
CURRENTLY OPERATING COMMERCIAL INCINERATION FACILITIES

FACILITY	UNIT NUMBER/TYPE	WASTE FORMS BURNED
CHEMICAL WASTE MANAGEMENT SAUGET, IL ILD098642424	3 FIXED HEARTHS 1 MOBILE ROTARY KILN WITH LIQUID INJECTION	LIQUIDS SLUDGES SOLIDS
CHEMICAL WASTE MANAGEMENT (FORMERLY SCA) CHICAGO, IL ILD000672121	1 ROTARY KILN	LIQUIDS SLUDGES SOLIDS
CHEMICAL WASTE MANAGEMENT* PORT ARTHUR, TX TXD00838896	1 ROTARY KILN WITH LIQUID INJECTION	LIQUIDS SLUDGES SOLIDS
ENVIRONMENTAL SYSTEMS CO. EL DORADO, AR ARD069748192	2 ROTARY KILNS WITH LIQUID INJECTION	LIQUIDS SLUDGES SOLIDS
GSX THERMAL OXIDATION CORP. ROEBUCK, SC SCD981467616	1 LIQUID INJECTION	LIQUIDS
LWD, INC. CALVERT, KY KYD088438817	1 MULTIPLE HEARTH 1 ROTARY KILN WITH LIQUID INJECTION	LIQUIDS SLUDGES SOLIDS
OLIN CORP. CHEMICALS GROUP BRANDENBURG, KY KYD006396246	1 LIQUID INJECTION	LIQUIDS
ROLLINS ENVIRONMENTAL SERVICES BATON ROUGE, LA LAD010395127	1 ROTARY KILN	LIQUIDS SLUDGES SOLIDS
ROLLINS ENVIRONMENTAL SERVICES BRIDGEPORT, NJ NJD053288239	1 LIQUID INJECTION 1 ROTARY KILN WITH LIQUID INJECTION	LIQUIDS SOLIDS
ROLLINS ENVIRONMENTAL SERVICES DEER PARK, TX TXD055141378	2 ROTARY KILNS WITH LIQUID INJECTION 1 ROTARY REACTOR	LIQUIDS SLUDGES SOLIDS GASES
ROSS INCINERATION SERVICES GRAFTON, OH OHD048415665	1 ROTARY KILN WITH LIQUID INJECTION	LIQUIDS SOLIDS
RHONE–POULENC BASIC CHEMICALS* (FORMERLY STAUFFER CHEMICAL COMPANY) BATON ROUGE, LA LAD008161234	2 LIQUID INJECTION	LIQUIDS SLUDGES
RHONE–POULENC BASIC CHEMICALS* (FORMERLY STAUFFER CHEMICAL COMPANY) HOUSTON, TX TXD008099079	1 LIQUID INJECTION	LIQUIDS SLUDGES
THERMALKEM ROCK HILL, SC SCD044442333	1 MULTIPLE HEARTH	LIQUIDS SLUDGES SOLIDS GASES

SOURCES: TSDR Capacity Data Set; ICF Commercial Facility Verification Analysis (April 1990).

*Expected to be available by the end of 1990.

Comments:

The comment addressing future available capacity is presented below:

- Hazardous Waste Treatment Council, (HWTC; 172).

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

3. 1990-92 Capacity Availability

EPA has totally and arbitrarily omitted from its capacity calculations any capacity limits which its data set indicates will be coming on line in 1990-92, even though its Background Document, LD 12, states (Volume II, p. 3-240) "Planned capacity could possibly become available by May 1990", i.e., the effective data of the regulation. Clearly some of the capacity in the EPA data set will be on line before the regulation is effective in the second third of 1990, and could provide capacity for all the sludges or all the solids, or both. For example, two HWTC member companies have over 3.5 million gallons/year additional capacity as a result of their trial burns conducted after the 1986 data report on which the TSDR survey is based.

Furthermore, even if EPA were to assume that none of the 1990-92 capacity will come on line by May 8, 1990, it would be totally unreasonable to conclude that none will be operational before May 8, 1992 (or later), 28 months into the 36 month 1990-1992 time period. Of the enormous capacity increase estimated for 1990-92 – 190 MG/Y for solids and sludges (LD 12, Volume III, p. 4-38) – certainly at least 12.7 MG/Y (less than 10% of the total) will be available by May 8, 1991, 16 months into the 1990-92 time period. Thus, on this basis alone, no more than a one year capacity variance would be even remotely justifiable.

2.5 Miscellaneous

Summary:

Two commenters (Chemical Waste Management (CWM; 159) and Envirocare of Utah (208)) addressed miscellaneous combustion-related issues. Chemical Waste Management (159) stated that some cement kiln facilities are not permitted to accept certain EP-toxic codes and State or federal regulations may delay modification of permits. According to Chemical Waste Management (159) if this delay were to occur, large volumes of waste would be sent to incinerators, thereby creating a capacity shortfall. Chemical Waste Management, (159) suggested that the Agency alleviate this potential shortfall by allowing facilities to add characteristic codes to their permits. According to Chemical Waste Management's proposal, two conditions would be established for the addition of characteristic codes to permits: 1) codes would be required to comply with dual characterization schemes, and 2) the facility would be required to have previously managed the listed component of the waste.

Envirocare of Utah (208) stated that the proposed rule was cumbersome and difficult to understand. Envirocare of Utah (208) questioned whether "combustion of sludge/solids" is similar enough to be considered incineration and therefore included in the proposed national capacity variance. Under federal law, cement kilns do not presently require air emission permits to burn hazardous waste and either have interim status for storage or don't. Thus the comment seems to lack legal basis.

Response:

EPA disagrees with the former commenter (Chemical Waste Management (159). In addition, as the Agency has already implemented a formalized permit modification process, EPA does not believe that new permit modification procedures are required.

EPA would like to clarify that combustion of sludge/solids does include incineration.

Comments:

Comments addressing miscellaneous issues are presented in the following order:

- Chemical Waste Management (159); and
- Envirocare of Utah (208).

Commenter: Waste Management, Inc. and Chem Waste Management Inc.

Comment:

c. Permitting Dilemmas

Some facilities, such as cement kilns, are not permitted to accept the EP-toxic codes. In our experience, many supplemental fuel materials, such as spent solvents, may also be EP-toxic for lead or chromium. State or federal regulations may delay (or even prohibit) these cement kilns from adding the waste codes to their permits in a timely fashion. If this occurs, there will be a shift in demand from energy recovery facilities to incinerators. Because they preclude the use of otherwise available technologies, these circumstances may create treatment capacity shortfalls. To prevent a possible capacity shortfall, we suggest that EPA use its HSWA authority to allow a hazardous waste facility to add characteristic codes if the codes are necessary to comply with the new dual characterization scheme and the facility has previously managed the listed component of the waste.

Docket Number: LD12-00208

Commenter: Envirocare of Utah, Inc.

Comment:

The first comment is that the proposed rule in 40 CFR 268.35(h) is very cumbersome to read. In attempting to read the rule and understand it for compliance, the preamble must be referenced. Additionally, questions such as whether "combustion of sludge/solids" is similar enough to be considered "incineration" and, therefore, inclusive in the variance are left unsatisfactorily addressed. It is suggested that the language which reads ". . . based on incineration, vitrification, or wet-air oxidation . . ." be removed. Alternatively, EPA may simply amend the tables to indicate the basis of the treatment standard.

CHAPTER 3

D001 IGNITABLE CHARACTERISTIC WASTES

EPA received thirteen comments (Envirosafe (81), ThermalKEM/CyanoKEM (110), Rollins Environmental Services (124), Leather Industries of America (146), Ash Grove Cement (171), Hazardous Waste Treatment Council (172), ENSCO (188), Dupont (189), Union Carbide (190), Sterling (197), Ethyl Corporation (209), Nortru (241), and HWTC (L247)) addressing D001-related issues. Seven commenters (ThermalKEM/CyanoKEM (110), Rollins Environmental Services (124), Ash Grove Cement (171), Hazardous Waste Treatment Council (172) ENSCO (188), Nortru (241), and HWTC (L247)) questioned the available incineration capacity estimate and the proposed variance for D001. Two commenters (Leather Industries of America (146) and Union Carbide (190)) agreed with the capacity variance for D001 nonwastewaters. Six commenters (ThermalKEM/CyanoKEM (110), HWTC (172) Dupont (189), and Sterling Chemicals (197), Ethyl Corporation (209), and HWTC (L247)) questioned EPA's required capacity estimate, and three commenters requested clarification of the definition for D001 sludges and solids. Commenters addressed four major issues:

- EPA Under-Estimated Available Capacity For D001, Thus A Variance Is Unjustified;
- Inadequate Capacity Exists To Treat D001, Thus A Variance Is Justified;
- EPA's Required Capacity Estimate Is Questionable; and
- Clarification Of The Definition For D001 Sludges And Solids Is Needed.

3.1 EPA Under-Estimated Available Capacity For D001, Thus A Variance Is Unjustified

Summary:

Seven commenters (ThermalKEM/CyanoKEM (110), Rollins Environmental Services (124), Ash Grove Cement (171), Hazardous Waste Treatment Council (172) ENSCO (188), Nortru (241), and HWTC (L247)) disagreed with the proposed variance for ignitable D001 sludges and solids. One commenter (ThermalKEM (110)) disagreed with the variance for D001 liquids mixed with sludges and solids, but indicated that if EPA determined that insufficient capacity exists to treat both sludges and solids, the Agency should grant a variance to D001 solids only.

Rollins Environmental Services (124) and HWTC (172) stated that a capacity variance for non-atomizable D001 sludges and solids is unjustified, unwarranted and illegal. HWTC believes that sufficient incineration capacity exists to treat these wastes. According to these commenters, EPA under-estimated available capacity for D001 nonwastewaters by omitting an incinerator from the available capacity estimate, not considering new facilities scheduled to come on-line in 1990, and assuming that non-hazardous waste has priority over hazardous waste. In a later comment, HWTC (L247) stated that their survey of incineration capacity indicates that excess capacity exists over EPA's estimate. HWTC (L247) indicated that the comments of Rollins Environmental Services accurately accounts for the underestimation of incineration capacity. HWTC (L247) also stated that the Agency did not account for sludges that are amenable to liquid blending in proposing a capacity variance for sludges.

ENSCO (188) agreed with the HWTC, stating the opinion that the HWTC survey demonstrates the existence of adequate capacity to treat D001 ignitable solids and sludges.

Ash Grove Cement (171) also disagreed with a capacity variance based on inadequate combustion capacity for "nonatomizable" sludges and solids. According to Ash Grove (171), the Agency, by eliminating fuel substitution as an acceptable BDAT, has restricted valid energy recovery operations in cement kilns. Ash Grove and Cadence have recently patented a solids energy recovery program. This program, which accounts for 90,000 tons per year of capacity, is available to any cement kiln and is in full scale operation in three states.

Nortru (241) also suggested that EPA include cement kilns in the available capacity estimate. Nortru (241) believes that cement kilns are suitable for treating D002 and D004 through D011 characteristic wastes that are amenable to fuel substitution and exhibit a D001 characteristic. According to Nortru (241), many companies mischaracterize their wastes as D001 based on the characteristic of combustibility. These types of wastes are very amenable to the fuel recovery process. According to Nortru, cement kilns are capable of handling these wastes as efficiently and safely as incinerators, and should therefore be considered in the available capacity estimate. Nortru believes that the Agency, by excluding fuel substitution, has placed an unnecessary burden on already limited incineration capacity. According to Nortru, the BDAT technology currently exists within fuel substitution to obviate any need to incinerate; consequently, a capacity variance for highly viscous sludges/solids which can be atomized for fuel substitution is unnecessary.

ThermalKEM (110) disagreed with the variance for D001 sludges and solids, but indicated that if EPA determined that insufficient capacity exists to treat both sludges and solids, the Agency should grant a variance to D001 solids only. ThermalKEM (110) also suggested that the Agency consider granting variances based on TOC thresholds. A D001 sludge/solid with a TOC greater than one percent would be restricted from land disposal, but D001 sludges/solids with a TOC less than one percent would qualify for a variance.

Response:

EPA agrees that the proposed variance for D001 liquids mixed with solids and sludges is unwarranted. Based on information available for the proposed rule, EPA had identified insufficient incineration capacity for D001 nonwastewaters; consequently, EPA proposed a national capacity variance. Based on data submitted during the public comment period and a review of available sludges and solids treatment capacity data for incineration and cement kilns, EPA has determined that sufficient incineration capacity exists to treat these wastes. Consequently, EPA is not granting a national capacity variance to these wastes.

One commenter mentioned that if EPA determined that insufficient capacity exists to treat both D001 sludges and solids, the Agency should grant a variance to D001 solids only. Since EPA is not granting a variance to D001 nonwastewaters, EPA is not considering a separate treatability group.

In the proposed rule, EPA proposed combustion as BDAT for D001 liquids mixed with sludges and solids. Consequently, comments addressing available treatment capacity for D001 also discuss available combustion capacity. These comments are summarized in the Combustion Chapter (Chapter 2). In order to prevent repetition, the Agency is referring readers to the detailed responses presented in Chapter 2 for the following items:

- EPA's omission of a Subpart O incinerator;
- EPA's assumption that non-hazardous waste has priority over hazardous waste;
- EPA's approach to future available capacity
- EPA's consideration of cement kilns in the available capacity estimate;
- EPA's underestimation of ThermalKEM's available treatment capacity; and
- EPA's analysis of an outdated survey.

Comments:

The comments indicating that EPA's proposed capacity variance for D001 ignitable wastewaters is unjustified are presented in the following order:

- ThermalKEM (110);
- Rollins Environmental Services (124);
- Ash Grove Cement (171);
- HWTC (172);

- ENSCO (188);
- Nortru (241); and
- HWTC (L247).

Docket Number: LD12-00110

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment:

2. D001 Solids and Sludges

ThermalKEM does not agree with the proposed capacity variance for D001 solids and sludges. Our available capacity alone is sufficient to satisfy 15% of the required capacity. The TSDR survey, as reported in the Third Thirds docket (Document No. LD12-1007A) underestimates our capacity by almost a factor of 10. The difference is due to additional capacity demonstrated following a trial burn conducted and approved following the 1987 TSDR survey.

If EPA determines that the required combined capacity for solids and sludges is insufficient, then consideration should be given to only applying the variance to solids, and restricting D001 sludge from land disposal effective May 1990. Nearly all sludges (and many solids) can be rendered pumpable by slurrying with other solvents or oils, prior to incineration. The definition of a solid vs. a sludge could be based on a viscosity determination, usually a viscosity of 10,000 SSU is a pumpable material.

An alternate approach is to base the capacity variance on a TOC threshold. Any solid or sludge D001 waste with TOC in excess of 1% would be restricted effective May 1990. Any solid or sludge with less than 1% TOC would qualify for the capacity variance.

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Comment:

CAPACITY VARIANCE FOR D001 NON-ATOMIZABLE SLUDGES AND SOLI

RES strongly believes that the capacity variance proposed non-atomizable D001 sludges and solids would be unjustif unwarranted, and illegal.

The basis for the proposed variance is presented by EPA being inadequate "combustion" capacity (Preamble pp. 48474-5). presume, in this context, that "combustion" is intended encompass the proposed treatment methods for D001 sludges solids (p. 48422), i.e., deactivation by incineration.

As demonstrated below, we believe adequate capacity exists treat D001 sludges and solids by incineration. In summary, reasons are:

1. EPA's capacity data set omits at least one exist operating, Part B permitted Subpart O incinerator, permitted capacity of which covers almost all of EP calculated capacity shortfall;
2. EPA has arbitrarily excluded from consideration any all capacity estimated to come on line in 1990, e though the regulation will not be effective until second third of the year;
3. EPA has arbitrarily, improperly and illegally assu that non-hazardous waste being treated by incinerat should have priority over hazardous D001 sludges a solids.

Each of these points is discussed further below.

Docket Number: LD12-00124 (continued)

Commenter: Rollins Environmental Services (DE) Inc.

Comment: (continued)

1. Data Omission

The capacity data utilized by EPA in making its capacity analysis for D001 (and other wastes) is presented in the Background Document, "Commercial, Treatment/Recovery Capacity Data Set", prepared by Versar, Inc., November, 1989, and Document LD12, "Third Third Waste Volumes, Characteristics and Required Available Treatment Capacity".

Table 3 of the latter document (Volume I, p. E-13) summarizes the 1989 available capacity for combustion of solids and sludges, and the claims against that capacity prior to the third third regulation, as follows:

		Millions of gallons per year
1989 available capacity		44
Less:		
Solvents	23	
California List HOCs	<1	
First Third	8	
Second Third	9	
Subtotal		40
Capacity remaining for 3rd 3rd		4

Against this remaining capacity of 4 million gallons/year, the document indicates (Volume III, Appendix D, pp. D-11 and D-12) a required capacity for the combustion of third third sludges and solids as follows (in millions of gallons):

	D001	All Other	Total
Sludges	6.9	1.4	8.3
Solids	5.8	4.0	9.8
Total	12.7	5.4	18.1

EPA indicates that the 4.0 million gallons/year (MG/Y) remaining capacity is adequate for all other (non-D001) wastes needing combustion of solids and sludges (Preamble, p. 48475), presumably because a capacity variance is being provided for multi-source leachate and contaminated soils. However, EPA asserts that no capacity remains for the 12.7 MG/Y required for D001 sludges and solids (*ibid*.).

Docket Number: LD12-00124 (continued)

Commenter: Rollins Environmental Services (DE) Inc.

Comment: (continued)

The data set EPA used in developing its capacity estimates, however, omits a major hazardous waste (Subpart O) combustion unit which has been in operation for more than a year and has a Part B permit.

More specifically, the "Commercial Treatment/Recovery Data Set" identifies each unit which is included in the capacity calculations, indicating the facility name, EPA ID Number, number and types of units and their thermal ratings and waste feed capabilities. The listing for Rollins Environmental Services (TX), Inc., Deer Park, Texas (Table 3-2, page 11), totally omits the Rollins Rotary Reactor, a mechanically fluidized-bed rotary reactor. In fact, this unit, which is operating under a Part B permit, was designed specifically for handling solids and sludges.

This unit's permitted capacity is 12,000 pounds/hour (page 50 of Part B Permit, attached as Exhibit 1). Permitted emission levels are based on 92% on-line operations. For operating reasons, approximately 25% of the tonnage being fed to the incinerator is atomizable liquids. Utilizing these permitted capacity levels together with a 25% liquid utilization and EPA's conversion factor of 240 gallons per ton (LD 12, Volume III, p. 4-18), provide the following annual capacity:

Permitted hourly capacity: 12,000 pounds/hour
÷ 2,000 pounds = 6 tons/hour
X 24 hours = 144 tons/day
X 365 days = 52,560 tons/year
X 92% on-line = 48,355 tons/year capacity
X 75% solids/sludges= 36,266 tons/year capacity for solids/sludges
X 240 gallons = 8,703,900 gallons/year capacity for solids/sludges
Rounding to 8.7 MG/Y.

Thus, this omitted unit alone provides almost 70% of the capacity needed to meet EPA's estimated capacity shortfall of 12.7 MG/Y for D001 sludges and solids. It certainly provides much more than enough capacity to meet needs for either the solids or sludges.

Docket Number: LD12-00124 (continued)

Commenter: Rollins Environmental Services (DE) Inc.

Comment: (continued)

2. 1990-92 Capacity Availability

EPA has totally and arbitrarily omitted from its capacity calculations any capacity which its data set indicates will be coming on line in 1990-92, even though its Background Document, LD 12, states (Volume II, p. 3-240) "Planned capacity could possibly become available by May 1990", i.e., the effective data of the regulation. Clearly some of the capacity in the EPA data set will be on line before the regulation is effective in the second third of 1990, and could provide capacity for all the sludges or all the solids, or both.

Furthermore, even if EPA were to assume that none of the 1990-92 capacity will come on line by May 8, 1990, it would be totally unreasonable to conclude that none will be operational before May 8, 1992 (or later), 28 months into the 36 month 1990-1992 time period. Of the enormous capacity increase estimated for 1990-92 -- 190 MG/Y for solids and sludges (LD 12, Volume III, p. 4-35) -- certainly at least 12.7 MG/Y (less than 10% of the total) will be available by May 8, 1991, 16 months into the 1990-92 time period. Thus, on this basis alone, no more than a one year capacity variance would be even remotely justifiable.

3. Priority of Non-hazardous Waste

In developing its estimate of available capacity, EPA first determined, from the 1986 TSD survey, how much capacity was already being utilized for the treatment of hazardous and non-hazardous waste ("Commercial Treatment/Recovery Data Set", pp. 6-7). EPA then deducted this "utilized capacity" from system capacity in order to determine "available capacity". (A somewhat different method was used in those instances where the capacity for treatment of hazardous waste was in some way more restricted than for the treatment of all wastes.)

EPA's TSD survey data indicates that a high percentage of system capacity was being utilized for treatment of non-hazardous waste. By deducting capacity utilized for non-hazardous waste from "available capacity", EPA is effectively assigning higher priority to the treatment of non-hazardous wastes than hazardous wastes.

Docket Number: LD12-00124 (continued)

Commenter: Rollins Environmental Services (DE) Inc.

Comment: (continued)

More specifically, the effect of granting a capacity variance to D001 solids and sludges is to allow continued landfilling of these hazardous wastes, in order to provide continued capacity for the treatment of non-hazardous waste! This is clearly contrary to the intent of the Land Disposal Restriction provisions of HSWA, the purpose of which was to move as rapidly as possible to discontinue land disposal of untreated hazardous waste.

Obviously, if EPA were to require BDAT treatment of D001 solids and sludges, market pricing would work to give a priority to required treatment (for D001 wastes) as compared to treatment which is not required (i.e., non-hazardous wastes). Allocating resources to higher priority demands is one of the functions of pricing in a market economy.

There is sufficient capacity, or almost sufficient capacity, for incineration of D001 solids and sludges on the basis of each one of the above three reasons. Taking all three together, a capacity variance clearly cannot be justified for these wastes.

Docket Number: LD12-00171

Commenter: Ash Grove Cement Company

Comment: . Ash Grove owns and operates several cement kilns and Cadence manages a nationwide hazardous waste fuel (HWF) marketing system.

Ash Grove and Cadence have developed and patented technologies for recycling HWF in industrial furnaces such as cement kilns. As one of the participating cement companies in the Cadence system, Ash Grove now burns HWF at kilns in three states and is seeking to undertake HWF programs at additional facilities.

4. We disagree with EPA's proposal to grant national capacity variances for certain wastes. First, EPA proposes a two year variance for certain "nonatomizable" sludges and solids (54 Fed. Reg. 48475) on the basis that there is not adequate combustion capacity. In fact, as pointed out in Attachment B, Ash Grove and Cadence have recently patented an effective method to recover energy from nonatomizable solids. This patented solids energy recovery program is in full scale operation in three states -- accounting for 90,000 tons of annual capacity -- and is available for use by any other cement kiln. EPA has considered the availability of "ample treatment capacity in liquid injection furnaces, and in boilers and industrial furnaces" (54 Fed. Reg. 46474, column 3) in deciding not to extend the variance to atomizable solids. The availability of ample cement kiln capacity for nonatomizable solids likewise eliminates the need for any variance for these wastes.

Docket Number: LD12-00172 3-13 D001 Characteristic Wastes

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

A. D001 - Capacity Variance For D001 Non-Atomizable Sludges And Solids

1. Overview

The HWTC strongly believes that the capacity variance proposed for non-atomizable D001 sludges and solids is unjustified, unwarranted, and illegal.

The basis for the proposed variance is presented by EPA as being inadequate "combustion" capacity (Preamble pp. 48474-5). We presume, in this context, that "combustion" is intended to encompass the proposed treatment methods for D001 sludges and solids (pp. 48422), i.e., incineration, and deactivation by incineration.

As demonstrated below, we believe adequate capacity exists to treat D001 sludges and solids by incineration. In summary, our reasons are:

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Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

- EPA's capacity data set omits at least one existing, operating, Part B permitted Subpart O incinerator, the permitted capacity of which covers almost all of EPA's calculated capacity shortfall;
- EPA has arbitrarily excluded from consideration any and all capacity estimated to come on line in 1990, even though the regulation will not be effective until the second third of the year;
- EPA has arbitrarily, improperly and illegally assumed that non-hazardous waste being treated by incineration should have priority over hazardous D001 sludges and solids.
- The TSDR survey conducted in 1987 and based on 1986 data is outdated in that it does not take into account capacity that become available as a result of trial burns conducted after 1986 that allowed for permitting of higher feed rates. Two HWTC member companies have justified a minimum of twice the capacity indicated in the TSDR survey for solids and sludges.

The HWTC has submitted the data already that accounts for each of these factors. This information was submitted on December 22, 1989, in accordance with EPA's requirement for early data comments submittal. In total, HWTC members have 18.4 million gallons per year available capacity for D001 solids and sludges, more than sufficient to satisfy the required capacity of 12 million gallons per year.

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

The data set EPA used in developing its capacity estimates, however, omits a major hazardous waste (Subpart O) combustion unit which has been in operation for more than a year and has a Part B permit.

More specifically, the "Commercial Treatment/Recovery Data Set" identifies each unit which is included in the capacity calculations, indicating the facility name, EPA ID Number, number and types of units and their thermal ratings and waste feed capabilities. The listing for Rollins Environmental Services (TX), Inc., Deer Park, Texas (Table 3-2, page 11, attached to these comments as Exhibit 1), totally omits the Rollins™ Rotary Reactor, a mechanically fluidized-bed rotary reactor. In fact, this unit, which is operating under a Part B permit by a subsidiary of a HWTC member company, was designed specifically for handling solids and sludges.

This unit's permitted capacity is 12,000 pounds/hour (page 50 of Part B Permit, attached as Exhibit 1 to these comments). Permitted emission levels are based on 92% on-line operations. For operating reasons, approximately 25% of the tonnage being fed to the incinerator is atomizable liquids. Utilizing these permitted capacity

Made from recycled acid-free fiber

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

per ton (LD 12, Volume III, p. 4-18), provide the following annual capacity:

Permitted hourly capacity: 12,000 pounds/hour
÷ 2,000 pounds = 6 tons/hour
X 24 hours = 144 tons/day
X 365 days = 52,560 tons/year
X 92% on-line = 48,355 tons/year capacity
X 75% solids/sludges = 36,266 tons/year capacity for solids/sludges
X 240 gallons = 8,703,900 gallons/year capacity for solids/sludges
Rounding to 8.7 MG/Y.

Thus, this omitted unit alone provides almost 70% of the capacity needed to meet EPA's estimated capacity shortfall of 12.7 MG/Y for D001 sludges and solids. It certainly provides much more than enough capacity to meet needs for either the solids or sludges.

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

TABLE III-2

Incinerator Train II
Operating Parameters

	Kiln No. 2	Rotary Reactor No. 2	Afterburner No. 2
Maximum heat input, MM BTU/hr	120	33.5	N.A.
Maximum Waste feedrates, lbs/hr.	12,000	12,000	8,000
Minimum combustion gas exit temperature, degrees Fahrenheit	1,500	1,200	1,800
Maximum combustion gas temperature upset limit, degrees Fahrenheit	1,500	1,200	1,800
Maximum volumetric flow rate, acfm (wet)	N.A.	N.A.	60,000
Maximum combustion zone pressure	Atmospheric	Negative relative to seal pressure	Atmospheric
Rotational speed, rpm	3 (max)	6	N.A.
Minimum combustion gas O_2 concentration, wet basis	N.A.	N.A.	5.0% (1-hr rolling avg) 3.0% (instantaneous)
Maximum combustion gas CO concentration, wet basis	N.A.	N.A.	100
Maximum combustion gas CO concentration upset limit, wet basis	N.A.	N.A.	500

Comment Number: LD12-00188

Commenter: Environmental Systems Company (ENSCO)

Comment:

G) CAPACITY EXTENTIONS GENERALLY/DOO1 SPECIFICALLY

We urge EPA to regularly reassesses the data used to determine proposed capacity extensions. In the Treatment Council's review of capacity data, they found several instances where major permitted and operating commercial facilities were not listed or counted in the capacity calculations. While we acknowledge the complexity of measuring this fast-changing universe of sites, we believe that additional resources should be devoted to this process.

Insofar as D001 is concerned, we believe that the Treatment Council's recently completed survey demonstrates that capacity is available to handle DOO1 ignitable solids and sludges.

Docket Number: LD12-00241

Commenter: Nortru, Inc.

Comment:

5. These proposed rules suggest inadequate capacity currently exists for certain sludges, solids and high viscosity materials which cannot be atomized for fuel substitution. Petro-Chem currently operates equipment designed specifically to process these types of wastes into useable fuel products. We do not believe that a capacity variance is required or warranted for these wastes because such technology currently exists.

Comment Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council

Comment:

A. D001 Waste

The HWTC has previously commented on the proposed capacity variance for D001 solids and sludges (see LD12-00172 and LD12-0033). The capacity data presented included a survey of incineration capacity of our member companies which demonstrates that excess capacity exists over what EPA had stated based on the superceded results of the 1987 TSDR survey. In particular, the comments of Rollins Environmental Services (LD12-00124) accurately accounts for the under estimation by Versar of incineration capacity.

In addition, blending capacity exists at many incineration facilities to process and blend sludges into atomizable form. EPA has not accounted for those sludges that are amenable to liquid blending in proposing a capacity variance for sludges.

3.2 Inadequate Capacity Exists To Treat D001, Thus A Variance Is Justified

Summary:

Two commenters (Leather Industries of America (146) and Union Carbide (190)) agreed with the proposed capacity variance for D001 nonwastewaters. According to Leather Industries of America (146) the Agency has failed to establish that the BDAT for highly viscous D001 ignitable sludges/solids is available. Leather Industries of America (146) supports the Agency's proposed variance based on the viscosity differential of sludges/solids and requested that EPA re-evaluate available capacity prior to terminating the variance.

Union Carbide (190) indicated that the dilution prohibition would dramatically increase the quantity of ignitable wastewaters requiring incineration. This increase would overwhelm the quantity of ignitable nonwastewaters for which the Agency granted a national capacity variance. Union Carbide (190) requested a national capacity variance based on the lack of incineration capacity if the Agency adopts the dilution prohibition.

Response:

EPA disagrees that D001 liquids mixed with solids and sludges should be granted a variance. Based on information available for the proposed rule, EPA had identified insufficient incineration capacity for D001 nonwastewaters; consequently, EPA proposed a national capacity variance. Based on data submitted during the public comment period and a review of available sludges and solids treatment capacity data for incineration and cement kilns, EPA has determined that sufficient incineration capacity exists to treat these wastes. Consequently, EPA is not granting a national capacity variance for D001 nonwastewaters and is not considering a separate treatability group based on viscosity.

EPA realizes that a commenter agreed with the proposed variance for D001 nonwastewaters because the commenter believed their waste was not amenable to fuel substitution or recovery. (The commenter's reasoning was not related to the availability of commercial treatment capacity).

Although EPA is not granting D001 nonwastewaters a variance, if the commenter believes their waste differs significantly from the waste used to determine the promulgated treatment standard, they may consider applying for a treatability variance.

EPA acknowledges the commenters' concerns regarding the effect of the dilution prohibition on the quantity of ignitable wastewaters requiring incineration. In the final rule, EPA has revised the proposed dilution prohibition; consequently, a national capacity variance based on an increase in required capacity due to the dilution prohibition is not necessary.

Comments:

The comments indicating that EPA's proposed capacity variance for D001 ignitable wastewaters is justified are presented in the following order:

- Leather Industries (146); and
- Union Carbide Chemicals and Plastics Company, Inc. (190).

Docket Number: LD12-00146

Commenter: Leather Industries of America, Inc.

Comment:

EPA proposes to establish incineration, fuel substitution, or recovery as mandatory processes for treatment of D001 Ignitable Liquids (54 FR 48420). In order to promulgate treatment standards for the category of characteristic was such as D001 Ignitable Liquids, EPA must establish that the selected technolog "available" and is the "best" such technology that will substantially diminish toxicity of the wastes or reduce the likelihood of migration of the waste's hazardous constituents. LIA feels the Agency has failed to meet this burden i establishing BDAT for highly viscous ignitable liquids. While incineration, substitution, and recovery may be entirely suitable for liquids with low solid content, such is not the case for those D001 Ignitable Liquids with high viscosity, such as leather finishing spray booth sludge. Due to high solids cont viscous consistency and resulting handling difficulties, such material is clea unsuitable for fuel substitution or recovery (both of which are currently bein utilized successfully for low solids spent solvent from leather finishing operations). In addition, we do not believe incineration is an environmentall prudent or cost effective option. The material would be extremely difficult t feed, and could very likely generate an EP Toxic residue requiring even furthe treatment. Our experience indicates simple sludge washing and/or drying may b sufficient to render such materials non-hazardous. Therefore, we recommend EP consider alternative technologies such as sludge washing or drying as the appropriate BDAT for D001 Ignitable Solids or highly viscous D001 Ignitable Liquids (e.g. spray booth sludge, paint sludge, etc.).

In the Agency's proposed third-third rule, EPA tacitly recognizes the difficulty in treating certain subcategories of D001 ignitables (namely sludge and solids) by proposing a two-year national capacity variance for such ignitat solids and sludges defined as having a viscosity greater than 2,500 centipoise Incineration, fuel substitution, and recovery are currently not available as practical forms of treatment for these ignitable wastes. LIA strongly suppor EPA's proposal to grant a BDAT variance for treatment of D001 ignitable solids sludges and also supports basing that variance on the viscosity differential of sludges and solids. LIA would also note that if the variance is adopted in fi form, EPA must review the availability of incineration, fuel substitution, and recovery as viable technologies prior to proposing a termination of the varianc A capacity variance is not a permanent substitute for the absence of demonstra technology.

1) Stockman, George, Determination of Spray Machine Transfer Efficiency for Leather Finishing, Journal of the American Leather Chemists Association, Vol. 83 (1988), page 125

Docket Number: LD12-00190

Commenter: Union Carbide Chemicals and Plastics Company, Inc.

Comment:

If the Agency truly intends to disallow normal comingling or aggregation for the purpose of making the wastes amenable to further treatment, then it must consider a national capacity variance for ignitable wastewaters. The Agency has established national capacity variance for nonwastewater ignitable wastes d to the lack of adequate incineration capacity. The same arguement holds for ignitable wastewaters. In fact, the amount of ignitable wastewaters to be sent to boilers or incinerators may dwarf the potential nonwastewater ignitable wastes for whic the national capacity variance was established. As previously stated, one UCC facility alone would need to burn an additional 130 million pounds of ignitable wastewater per year.

3.3 EPA's Required Capacity Estimate Is Questionable

Summary:

Six commenters (ThermalKEM/CyanoKEM (110), HWTC (172) Dupont (189), and Sterling Chemicals (197), Ethyl Corporation (209), and HWTC (L247)) questioned the required capacity estimate for D001 ignitable liquids mixed with sludge/solids. ThermalKEM/CyanoKEM (110) and HWTC (172)) disagreed with the 12 million gallon required capacity estimate for sludges and solids based on the 40CFR 262.21 (a)(2) definition of ignitable. Sterling Chemicals (197) stated that the Agency's data base grossly underestimates the volume of D001 characteristic wastes subject to BDAT because of the Agency's proposed interpretation that non-hazardous residues separated from characteristic ignitable wastes must also meet BDAT standards. According to Sterling Chemicals (197) the TSDR Survey would not have included those volumes since they are not hazardous wastewater.

HWTC (L247) agreed with the concerns expressed by Sterling Chemicals (197). HWTC stated that (L247) incineration should not be the required treatment for wastewaters separated from D001 wastes that are non-ignitable and that biological treatment should be permitted for these wastes. According to HWTC (L247), this approach would assure the availability of incineration capacity for the D001 sludges and solids amenable to incineration.

Dupont (189) stated that the volumes of D001 sludges reported in the background document may be under-estimated because their facility's sludges were included in the leachate category and not in D001. According to Dupont (189) if this facility's wastewater D001 treatment residuals require incineration as D001 derivatives, the volume of leachate residuals reported in the background document should be included in the required capacity estimate for D001 liquids mixed with sludges and solids. According to Dupont (189), if the residuals require incineration, the volume of D001 residuals at the Dupont Chamber Works facility would overwhelm incineration capacity for D001 liquids mixed with sludges and solids.

Ethyl Corporation (209) expressed a similar concern regarding treatment residuals. According to Ethyl Corporation (209), if wastewater biological treatment sludge requires treatment as a D001 derivative, residual volumes would overwhelm national incineration capacity, but the requirement would provide little or no environmental benefit.

Response:

EPA disagrees that the required capacity estimate for D001 ignitable liquids mixed with sludges and solids is questionable. Although two commenters questioned the Agency's estimate, neither of these commenters submitted data identifying errors in EPA's analysis. Consequently, EPA was unable to revise the estimate for D001 sludge/solid wastes requiring alternative treatment based on these comments. However, EPA has re-evaluated the quantity of ignitable D001 liquids mixed with sludge/solids requiring treatment. Based on an analysis of the existing information, EPA found no basis to revise the 12 million gallon estimate of ignitable D001 liquids mixed with sludge/solids will requiring treatment. The required capacity estimates for waste codes regulated under the land disposal restrictions are based on information reported in the TSDR Survey. The TSDR Survey does not request information on testing methods. The questionnaire, however, does request information regarding the physical form of wastestreams. The Agency assumes that the respondents characterized the physical form appropriately.

EPA does not agree that non-hazardous residues separated from characteristic ignitable wastes should be included in the required capacity estimate. Under the final rule, nonhazardous residues that are separated during legitimate treatment processes would meet treatment standards, or would be a new treatability group which is not promulgated, and thus does not require treatment capacity. Thus, EPA does not include these volumes in the required capacity estimate.

EPA acknowledges the commenters' concerns regarding treatment of residual sludges. According to the proposed rule, a "waste which is hazardous at the point of generation and is destined for land disposal (i.e. a prohibited hazardous waste) remains subject to the requirements of section 3004(m) regardless of its concentration at any subsequent time, or at least must be treated to the section 3004(m) level to avoid violation of section 3004(m)" 54 Federal Register Pg. 48490, November 22, 1989.

One commenter indicated that if this interpretation were finalized their facility's wastewater treatment residuals, which were included in the required capacity estimate for leachate, may require incineration as D001 derivatives and therefore should be included in the D001 required capacity estimate. The wastestream in question is a residual sludge generated from wastewater treatment of D001 contaminated groundwater and multi-source leachate (F039). According to the commenter, the residual sludge no longer exhibits the ignitable characteristic. Residues from legitimate treatment processes that no longer exhibit the ignitability characteristic do not require treatment for D001. However, because multi-source leachate (F039) is a listed waste, the derived from rule applies, and the residual sludge requires treatment for the listed waste. Based on treatment requirements, EPA assigned the volume of this residual sludge to the required capacity estimate for multi-source leachate (F039). As multi-source leachate has been granted a two-year national capacity variance, the residual sludge in question is covered by this variance.

Comments:

The comments addressing EPA's required capacity estimate for D001 are presented in the following order:

- Thermalkem (110);
- HWTC (172);
- Dupont (189);
- Sterling (197);

- Ethyl Corporation (209); and
- HWTC (L247).

Docket Number: LD12-00110

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment:

EPA should also clarify in the final rule how one is to determine if they are generating a D001 solid or sludge waste that is eligible for the variance. There is no clear definition of a D001 solid or sludge in SW846 or 40CFR Part 261. It is difficult to believe that 12 million gallons per year of solids and sludges are generated that meet the definition under 40CFR261.21(a)(2) of ignitable. Is the assessment of required capacity correct? Also, is the determination of liquid under 261.21(a)(1) based on the paint filter test ("free liquid" Method 9095) or the EP test (Method 1310) or based on the releasable liquid test under Method 9096? Clarification of this issue is important if the capacity variance for D001 "solids and sludges" goes final on May 8, 1990. EPA should review a Memorandum No. 29 dated 10/24/89 of David Friedman, Chief of EPA's Methods Section regarding the definition of liquid in clarifying this critical issue in the final Third Thirds rule.

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

HAZARDOUS WASTE TREATMENT COUNCIL

EPA should also clarify in the final rule how one is to determine if they are generating a D001 solid or sludge waste that is eligible for the variance. There is no clear definition of a D001 solid or sludge in SW846 or 40 CFR Part 261. It is difficult to believe that 12 million gallons per year of solids and sludges are generated that meet the definition under 40 CFR 261.21(a)(2) of ignitable. Is the assessment of required capacity correct? Also, is the determination of liquid under 261.21(a)(1) based on the paint filter test ("free liquid" Method 9095) or the EP test (Method 1310) or based on the releasable liquid test under Method 9096? Clarification of this issue is important if the capacity variance for D001 "solids and sludges" goes final on May 8, 1990. EPA should review a Memorandum No. 29 dated 10/24/89 of David Friedman, Chief of EPA's Methods Section regarding the definition of liquid in clarifying this critical issue in the final Third Thirds rule.

7. CAPACITY FOR HANDLING IGNITABLE WASTES

A. EPA MAY NOT HAVE CONSIDERED CHAMBERS WORKS PRIMARY/SECONDARY SLUDGES IN DETERMINING WHETHER TO GRANT A CAPACITY VARIANCE FOR D001 IGNITABLE, NON-ATOMIZABLE SLUDGES

It is possible that the proposed D001 treatment standard of "incineration, fuel reuse or recycling" could be deemed to carry through to the wastewater treatment plant residual sludges at Chambers Works. (This situation is described in greater detail earlier in these comments on D001 Ignitable Wastes.) If this were to occur.

Du Pont would be required to incinerate approximately 21 million gallons/year of primary and secondary sludges.

EPA has considered these residuals in proposing to grant a two-year national capacity variance to leachate/groundwater non-wastewater residuals. If that variance is finalized, it will relieve Chambers Works of the obligation to incinerate the sludges to satisfy the leachate/groundwater standards. EPA has also proposed to grant a national capacity variance to D001 ignitable non-atomizable sludges and solids. However, the volumes of the D001 sludges presented in the Capacity Background Documents are considerably smaller than those for leachate residuals -- principally, we believe, because the Chambers Works sludges were included in the leachate category, and not in D001.

In the event that EPA determines that there is not sufficient capacity to incinerate leachate residuals, but that there is enough capacity for D001 ignitable solids and sludges, we are unsure of the outcome for the Chambers Works sludges. If the variance for the listed leachate residues overrides the incineration requirement for D001 ignitables, the problem is resolved. However, if the D001 requirement must be satisfied notwithstanding the leachate variance, and the Chamber Works sludges require incineration as D001 derivatives, we believe that solid/sludge incineration capacity will be inadequate.

Du Pont submits that if EPA persists with its current interpretations regarding carry through of treatment standards, then it should consider the above issues in determining whether adequate incineration capacity exists for D001 non-atomizable solids and sludges.

Docket Number: LD12-00197

Commenter: Sterling Chemicals

Comment:

B. **Comments on Specific Characteristic Wastes**

1. The Agency's data base grossly underestimates the volume of D001 (ignitability) characteristic wastes subject to BDAT because of the Agency's proposed interpretation that non-hazardous residues separated from characteristic ignitable wastes must also meet the BDAT standard. The Agency has ignored the large volumes of wastewater that will require treatment based on this proposed interpretation. The Agency should not extend the BDAT standards to include waters and nonwastewaters that no longer exhibit the ignitability characteristic.

The Agency has proposed the point of generation of a hazardous waste to be a point prior to any dilution or aggregation. See id. at 48,495. Based on this interpretation, the Agency has substantially increased the volume of hazardous waste that must meet the "incineration, fuel substitution or recovery" BDAT standard. Volumes may actually be orders of magnitude higher than the Agency has estimated. This discrepancy arises because of the use of organic-water separation.

Organic-water separation is used to aggregate wastes and to separate water from combustible organics. This treatment process reduces the volume of waste before final treatment, and is always necessary when organics are recovered for fuel substitution or recycling. The organic-water mixture fed to a separator often exhibits the D001 characteristic. By today's interpretation, not only the separated ignitable organic phase but also the nonignitable water phase requires treatment to BDAT standards. See id. at 48,421 and 48,490. This discharged water generally not only no longer exhibits the D001 characteristic, neither will it support combustion. Water treatment by incineration increases the total D001 characteristic waste volume by orders of magnitude. This orders of magnitude increase has not been included in the capacity evaluation, yet must be considered.

For example, Sterling Chemicals operates a small organic-water separator to separate a water phase from ignitable organics. The D001 ignitable organics are burned in utility boilers on site and the water is biologically treated. Separated water no longer exhibits a D001 characteristic. Responses to

Docket Number: LD12-00197 (continued)

Commenter: Sterling Chemicals

Comment: (continued)

Agency questionnaires would not have included these volumes since they are not hazardous wastewater. Based on the proposed interpretation, the water phase, though not a hazardous waste, is also subject to BDAT treatment. Sterling Chemicals burns approximately 0.3 million gallons per year D001 hazardous waste organics in on site utility boilers. The proposed interpretation adds at least 0.39 million gallons of new D001 wastewater, for at least a 125 percent increase in total D001 waste requiring treatment to BDAT standards.

Sterling Chemicals' organic-water separation systems are small compared to other petrochemical facilities and petroleum refineries. The total impact of the additional wastewater on the reported available liquid injection incineration capacity cannot be estimated at this time.

Fuel substitution and recovery are inappropriate treatment methods for organic-water separator waters. These waters would require liquid injection incineration if BDAT were promulgated because of their low heat value. The Agency estimates available liquid injection capacity for atomizable wastes to be approximately 249 million gallons per year. However, this estimate exaggerates capacity since treatment is only the final step. The estimate ignores storage capacity at the generating and treatment sites and transportation to the treatment site. The estimate also ignores the need to modify facilities to contain and transfer the non-hazardous wastewater to the new storage facilities, and the need for any associated permit modifications. These facilities and compliance activities will require substantial effort and time.

The Agency should not require additional treatment of wastes and wastewaters below the D001 characteristic limits. Should the Agency insist on promulgating such requirements, and the proposed regulation of non-hazardous waste is adopted, a two year national capacity variance must be granted to prepare the infrastructure to collect, store, and transfer these non-hazardous wastes to incineration. See discussion in § A.3. above concerning the questionable value of a variance. This will allow a minimal amount of time to construct on site storage, modify waste management practices as appropriate, and establish interim status. It is likely that even longer variance periods will be necessary to comply at individual locations.

Docket Number: LD12-00209

Commenter: Ethyl Corporation

Comment:

Treatment Below Characteristic Level

Through the requirement to treat characteristic waste below the characteristic level, EPA is attempting to inappropriately extend the "derived from" rule to characteristic wastes. This requirement will result in poor utilization of treatment capacity with little additional environmental benefit. It would also establish some interesting inconsistencies in solid waste regulation.

For example, a waste stream with a pH of 3 can be legally disposed on the land, while a waste stream with a pH of 1.5 would have to be treated to a pH of 6-9 before disposal on the land. Neutralization to this level would result in the generation of large amounts of solid salts, disposal of which will strain the nation's nonhazardous landfill capacity.

As another example, treatment of a hazardous wastewater stream exhibiting the D001 characteristic with >1% TOC (a nonwastewater by definition) in a biological treatment system would require the biological sludge to be treated by "incineration, fuel substitution or recovery" because the treatability group has not changed. This requirement would overwhelm the national incineration capacity and require use of large amounts of fuel for incineration while providing little or no environmental benefit.

Comment Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council

Comment:

The HWTC agrees with the concerns expressed by Sterling Chemicals (LD12-00197), that wastewaters separated from D001 wastes that are non-ignitable should not be required to be treated by incineration, but should be permitted to be biologically treated or treated using carbon adsorption processes. We have expressed this position in previous comments submitted January 8, 1990 and February 20, 1990. I this way EPA can assure the availability of incineration capacity for the D001 solids and sludges that are only amenable to incineration.

3.4 Clarification Of The Definition For D001 Sludges And Solids Is Needed

Summary:

Three commenters (Envirosafe (81), ThermalKEM (110), and HWTC (L247)) addressed an issue that could not be classified in the previously listed categories. Envirosafe (81) requested that EPA clarify whether the 2500 centipoise standard for defining the subcategory of D001 sludges and solids is made at the site of generation, or the site of disposal. ThermalKEM (110) also suggested that EPA clarify how one is to determine if they are generating a D001 sludge/solid that is eligible for a capacity variance. HWTC (L247) made a similar assessment stating that if EPA promulgated a capacity variance for D001 solids and sludges, a test would be needed to clearly identify waste streams eligible for the variance.

Response:

In the proposed rule, EPA requested comments on the need for a subcategory of D001 waste as the basis for granting a national capacity variance. Based on comments and the reanalysis of available incineration capacity, EPA has determined that the D001 subcategory for non-atomizable sludges and solids is no longer necessary. Adequate capacity exists to treat D001 liquids mixed with sludges and solids; consequently EPA is not granting a capacity variance to these wastes.

Comments:

The comments addressing a miscellaneous issue are presented below:

- Envirosafe (81);
- ThermalKEM (110); and
- HWTC (L247).

Comment Number: LD12-00081

Commenter: Envirosafe

Comment:

Page 48479, 2nd Col.

EPA sets a standard of 2500 centipose for sub-category D001 sludges for the capacity variance. However, it is not clear where the 2500 centipose measurement is made. Is the measurement made at the site of generation or rather at the site of disposal? This needs to be clarified. Perhaps a percent solids standard would be more appropriate.

Docket Number: LD12-00110

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment:

EPA should also clarify in the final rule how one is to determine if they are generating a D001 solid or sludge waste that is eligible for the variance. There is no clear definition of a D001 solid or sludge in SW846 or 40CFR Part 261. It is difficult to believe that 12 million gallons per year of solids and sludges are generated that meet the definition under 40CFR261.21(a)(2) of ignitable. Is the assessment of required capacity correct? Also, is the determination of liquid under 261.21(a)(1) based on the paint filter test ("free liquid" Method 9095) or the EP test (Method 1310) or based on the releasable liquid test under Method 9096? Clarification of this issue is important if the capacity variance for D001 "solids and sludges" goes final on May 8, 1990. EPA should review a Memorandum No. 29 dated 10/24/89 of David Friedman, Chief of EPA's Methods Section regarding the definition of liquid in clarifying this critical issue in the final Third Thirds rule.

Comment Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council

Comment:

Finally, as we have previously commented, if EPA still intends on promulgating the unwarranted capacity variances for D001 solids and sludges, a test is needed to clearly definitely identify those waste streams that are eligible for the variance. There are currently no criteria to distinguish a sludge from a liquid, other than the term non-atomizable. A generator is not aware of what is and is not non-atomizable, since this is an incinerator process-specific consideration. EPA must define some criteria such as viscosity, that can be evaluated by the generator, if this capacity variance is maintained.

CHAPTER 4

D002 CORROSIVE CHARACTERISTIC WASTES

The Agency received six comments (Ross Environmental Services (54), Olin Chemicals (129), Rohm and Haas Company (194), Sterling Chemicals (197), Allied-Signal Inc. (267), and Hazardous Waste Treatment Council (HWTC) (L0247)) relating to capacity and national capacity variance issues associated with D002 corrosive characteristic wastes. Four commenters ((Olin Chemicals (129), Sterling Chemicals (197), Allied-Signal Inc. (267) and HWTC (L0247)) discussed proposed treatment standards and requested national variances, and the other two commenters (Ross Environmental Services (54) and Rohm and Haas Company (194))discussed treatment standards and submitted data relating to D002 corrosive characteristic wastewaters. The commenters addressed the following two issues:

- A Two-Year National Capacity Variance For D002 Corrosive Wastewaters Is Requested If EPA Promulgates Either The Proposed Tighter Limit On pH Or The Proposed Requirement That Neutralization Processes Result In The Generation Of Insoluble Salts; and
- A Capacity Problem Will Arise For Corrosive Organic Wastewaters If EPA Does Not Acknowledge Incineration As An Appropriate Deactivation/ Neutralization Process.

These issues are discussed in detail in the following sections. In addition, two commenters submitted data related to D002 corrosive wastewaters. These data are summarized and acknowledged in the subsequent section.

4.1 A Two-year National Capacity Variance For D002 Corrosive Wastewaters Is Requested If EPA Promulgates Either The Tighter Limit On pH Or The Proposed Requirement That Neutralization Processes Result In The Generation Of Insoluble Salts

Summary:

Three commenters, Olin Chemicals (129), Sterling Chemicals (197) and Allied-Signal Inc. (267) requested the Agency either to reconsider its BDAT proposal for D002 corrosive wastewaters or to grant a national capacity variance of two years to develop new treatment capacity. Olin Chemicals (129) argued that if EPA promulgates the proposed standards specifying either the tighter limit on pH or the requirement for the generation of insoluble salts, EPA must grant a two-year national capacity variance to install new or modify existing treatment systems.

Sterling Chemicals (197) stated that this facility neutralizes 26 million gallons of spent acid with 7.4 million gallons of spent caustic per year. The neutralization systems are designed to treat D002 characteristic wastes to non-hazardous wastewaters, but are not designed to treat these wastes to a pH of 6 to 9 as required by the proposed standards. The commenter stated that, if the proposed treatment standards are not changed, then the non-hazardous wastewaters resulting from their treatment process (33.4 million gallons per year) must be added to the capacity evaluations and that adding this volume to the previously estimated nationwide volume (22 million gallons per year) would result in a total volume exceeding the available nationwide treatment capacity (36 million gallons per year). This commenter requested a two-year national capacity variance if the proposed standards are not changed. The commenter also added that if no variance is granted then the chemical industry will not be able to comply with the regulations on the effective date.

Allied-Signal Inc. (267) argued that, if EPA promulgates the proposed standards, then the Agency must issue a two-year national capacity variance. The commenter stated that the Agency's impression that there are "few, if any," currently surface-disposed pH corrosive wastes does not take into account industrial wastewater operations that use holding basins or lagoons as part of their wastewater treatment processes.

Response:

For D002 wastewaters, EPA is not promulgating the proposed tighter limits on pH ($6 \leq pH \leq 9$) or the requirement for the generation of insoluble salts in the final rule. EPA has determined that sufficient capacity does exist for D002 wastewaters under the promulgated BDAT standards and, therefore, EPA is not granting a national capacity variance for these wastewaters.

Concerning corrosive wastewaters that are currently land disposed, EPA recognizes that some industrial wastewater operations use holding basins or lagoons as part of the wastewater treatment processes. However, EPA believes that most of industrial wastewater operations are exempt from the land disposal restriction regulations for the following reasons:

1. In many situations, treatment to meet NPDES or pretreatment standards is conducted in tanks and, therefore does not involve land disposal as defined in section 3004(k) of RCRA.
2. If a surface impoundment is used to treat hazardous waste prior to NPDES discharge or before the waste falls under RCRA's domestic sewage exclusion (40 CFR 261.4), such surface impoundments are exempt if they satisfy the requirements of section 3004(o)(1) (i.e., minimum technological requirements) (requirements of 40 CFR 268.4).

Therefore, the promulgated regulations are not likely to affect facilities that use tanks or minimum technology surface impoundments in their treatment systems.

Comments:

The comments requesting variance for D002 corrosive wastewaters are presented in the following order:

- Olin Chemicals (129: pp. 14-15);
- Sterling Chemicals (197: p. 12); and
- Allied-Signal Inc (267: pp. 37-38).

Docket Number: LD12-00129

Commenter: Olin Chemicals

Comment:

The Agency fails, in its proposed regulation, to specify what is to be done with these "non-toxic" dissolved solids which are to be precipitated as "insoluble salts." Further, in its capacity demonstration USEPA fails to take into account whether or not there is existing treatment capacity to precipitate these "insoluble salts", and whether or not there is existing landfill capacity (both hazardous and non-hazardous) for these salts. Most D002 streams are wastewaters which are treated with other acids or bases that are currently available at the generating facility. These treatment units, as stated above, have NPDES or POTW permits which are based on a given treatment process. Revision to the treatment system may require an NPDES/POTW permit modification. In addition, not only has the Agency failed to define "insoluble" but has also failed to specify which salts meet this category, the acids or alkalis that will produce these "insoluble salts" and whether there is sufficient production of these acids or alkalis to treat the billions of gallons per day of wastewater that will be impacted.

For the above reasons, Olin recommends that the treatment standard for the D002 Acid and Alkaline Subcategory be "Neutralization to: $2<pH<12.5$." Further, Olin recommends that the OSWER not include in its final preamble that these limits are established as BAT for effluent guidelines, but instead leave that determination to the Water Division.

Further, if the Agency promulgates the proposed standard specifying either the tighter limit on pH or the requirement for the generation of insoluble salts, the regulated community will need a two (2) year national capacity variance to install new or modify existing treatment systems.

Docket Number: LD12-00197

Commenter: Sterling Chemicals

Comment:

2. The Agency's proposed BDAT for D002 (corrosive) acid and alkaline characteristic wastes is technically unsound and needlessly overprotective. The Agency's data base on the D002 acid and alkaline wastes is flawed since it assumes that all D002 wastes that are reported as neutralized meet the proposed BDAT standards. . . .

Current process neutralization systems which treat D002 characteristic wastes are simply not designed to treat to a pH of 6 to 9. These non-hazardous wastewaters must be added to the capacity evaluation if the proposed treatment standards are not changed. Sterling Chemicals alone has a treatment capacity shortfall of 33.5 million gallons per year of hazardous waste requiring treatment to the proposed BDAT. Adding this to the original Agency nationwide volume estimate of 22 million gallons per year yields 55.5 million gallons per year, which far exceeds the 36 million gallons per year treatment capacity reported to be available. Other facilities will undoubtedly add neutralized characteristic corrosive wastewaters whose systems cannot reliably maintain a pH of 6 to 9.

Sterling Chemicals requests the Agency to reconsider its BDAT proposal requiring neutralization to pH 6 to 9 forming insoluble salts. Water quality concerns asserted by the Agency are better addressed under the Clean Water Act. By-product solid waste disposal has serious environmental and policy considerations. Failing reconsideration, the Agency must grant a national capacity variance of two years for industry to develop and install control systems capable of maintaining the BDAT standards prior to conveyance to a land treatment facility. *See* discussion in § A.3. above concerning the questionable value of a variance. If no variance is granted, the chemical industry will not be able to comply with the regulations on the effective date.

Docket Number: LD12-00267

Commenter: Allied-Signal Inc.

Comment:

E. A National Capacity Variance Should be Granted for pH Corrosive Wastewaters

If, contrary to all logic, EPA promulgates a treatment standard for pH corrosive hazardous wastes with the pH required to be between 6.0 and 9.0 and the generation of insoluble salts required, then EPA must issue a two-year national capacity variance as well. EPA's proposal would affect many wastewater treatment systems now in place to comply with NPDES permit requirements. Those systems, in many cases, involve neutralization without the generation of insoluble salts. To substitute a system that would generate insoluble salts would first require development of chemically feasible techniques for generation of such salts. Then, even more time would be required for the installation of a great deal of materials handling equipment to handle the lime and to separate and subsequently manage the enormous quantity of new sludge that might be generated. It will not be possible to segregate only the characteristically hazardous streams, at least without engaging in the wholesale repiping of large industrial complexes. As a result, creating the capacity and the capability of handling the wastes in ways capable of meeting the proposed treatment standard (where that is possible at all) will take substantial time.

EPA seems to be under the impression that "few, if any" pH corrosive wastes are currently surface-disposed. 54 *Fed. Reg.* 48479. This impression is based on the fact that these wastes are liquids, and on "the minimum technology requirements for surface impoundments and the ban on liquids in landfills." *Id.* It seems that EPA has failed to take into account industrial wastewater operations which employ holding basins or lagoons as part of the wastewater treatment process. Allied, and many (if not most)

Docket Number: LD12-00267 (continued)

Commenter: Allied-Signal Inc.

Comment: (continued)

other chemical producers employ such basins or lagoons.[illegible] Adequate neutralization capacity capable of producing insoluble salts (even where technically feasible) is simply not presently available, and will not be available for a substantial time.[illegible]

[illegible] Currently, many of Allied's wastewater treatment basins or lagoons are simply not affected by RCRA. These wastewater units aggregate for treatment waste streams outside the pH range of 6.0 to 9.0 which were at some point characteristically hazardous. However, these wastes are not hazardous when they enter the basin or lagoon and the pH of the effluent from the basin or lagoon is treated to meet NPDES or pretreatment standards (normally pH 6.0 to 9.0). Under EPA's proposed regulation for corrosive wastes, such wastewater treatment systems, which were designed, built and often approved by EPA or state environmental agencies to treat wastewater, and which never received and never will receive hazardous waste, would become subject to the LDR.

[illegible] Allied supports the Agency's proposal to grant a national capacity variance for D002 wastes that are deep well injected. *See* proposed § 148.16(d).

4.2 A Capacity Problem Will Arise For Corrosive Organic Wastewaters If EPA Does Not Acknowledge Incineration As An Appropriate Deactivation/ Neutralization Process

Summary:

One commenter (Hazardous Waste Treatment Council (HWTC; L0247) stated that a capacity problem will result if EPA does not acknowledge incineration as an appropriate deactivation/neutralization process for corrosive organic wastewaters. This commenter also suggested that neutralization is not required for corrosive/high organic content wastewaters.

Response:

EPA has data indicating that sufficient neutralization capacity exists to treat all surface-disposed D002 wastewaters. However, EPA is promulgating incineration as one method of treatment for D002 wastewaters. Thus the final rule allows the use of incineration as recommended by the commenter.

Comment:

The following comment, stating that a capacity problem will result if EPA does not acknowledge incineration as an appropriate deactivation/neutralization process for corrosive organic wastewaters, is presented:

- Hazardous Waste Treatment Council (HWTC; L0247)

Docket Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

B. D002 Wastes

The HWTC concurs with the comments made by Ross Environmental Services, Inc., that EPA must not require neutralization of corrosive/high organic content wastewaters prior to incineration. EPA must acknowledge that incineration is an appropriate deactivation/ neutralization process. Otherwise, a capacity problem will be created for corrosive organic wastewaters. In the course of the incineration process, acid gases formed are neutralized by the air pollution control equipment, which, in the case of wet scrubbers, produces a wastewater stream that is further neutralized. The solid ash residual produced is also non-corrosive. Therefore, no corrosive waste byproducts are generated by incineration of corrosive organic wastewaters.

4.3 Data Submittal Relating to D002 Corrosive Wastewaters

Summary:

Two commenters (Ross Environmental Services (54) and Rohm and Haas Company (194)) submitted capacity data related to D002 wastewaters.

Ross Environmental Services (54) stated that they received about 3 million gallons of corrosive wastewaters in 1988. This commenter requested that incineration be acknowledged as an appropriate deactivation and/or neutralization process.

Rohm and Haas Company (194) reported generation of 752 million gallons of corrosive wastewater at their Houston plant, 21 times more than the available national capacity. This commenter stated that off-site treatment and proposed treatment standard of recovery are not feasible, and that the only practical option, on-site treatment, cannot be accomplished by May 8, 1990 primarily because of the requirement that the neutralization process must result in the formation of insoluble salts. The commenter suggested five solutions:

1. Set treatment standards for corrosive wastewaters at characteristic parameters (pH between 2 and 12.5) and eliminate the requirement for formation of insoluble salts;
2. Adopt an interim treatment standard for corrosive wastewaters at the characteristic parameters and eliminate the requirement for formation of insoluble salts;
3. Allow neutralization to form sodium sulfate if treatment standards are not revised;
4. Allow very limited excursions from the 6 to 9 pH range, such as those allowed under NPDES permits, in addition to allowing formation of sodium sulfate; or
5. Clarify that streams from in-process, in-pipe neutralization are not subject to land disposal restrictions unless the discharges from these pipes are hazardous.

Response:

The treatment standards for corrosive wastewaters have been revised to include incineration. Thus, EPA believes the issue is resolved for the first commenter (Ross Environmental Services). The treatment standard for corrosive wastewater has also been revised to characteristic level. This is consistent with the recommendation made by the second commenter (Rohm and Haas Company). EPA believes this new standard will resolve capacity needs at this facility.

Comments:

These comments are presented in the following order:

- Ross Environmental Services (54: p. 1); and
- Rohm and Haas Company (194, pp. 7-23).

Docket Number: LD12-00054

Commenter: Ross Environmental Services

Comment:

Corrosive Waste:

Ross received approximately 3 million gallons of corrosive waste waters in 1988. These waters are often high in organic content and contain significant BTU value. Neutralizing with acids or bases prior to incineration is an unnecessary step. The Agency must acknowledge that incineration is an appropriate deactivation and/or neutralization process. Enclosed are representative waste profiles for wastes that were incinerated.

Docket Number: LD12-00194

Commenter: Rohm and Haas Company

Comment:

A. The Problem -- At One Plant Alone, R and H Generates 21 Times More Corrosive Wastewater Than There Is Capacity Throughout The U.S. To Neutralize The Wastewater To The Proposed Treatment Standards.

Although several R and H plants generate corrosive wastewater, the largest volumes of corrosive process wastewaters that could be subject to this proposed rule are generated at our Houston plant. There, a total of 2,060,000 gallons per day ("gpd") are generated from three process areas. This equates to 752 million gallons per year.

Off-site treatment is not a feasible option to achieve the proposed treatment standard. EPA's own data indicates the commercial capacity for neutralizing wastewater throughout the U.S. is only 36 million gallons a year. See 54 Fed. Reg. at 48,475, Table III.B.1.(c). R and H's generation at the Houston plant alone is 21 times this available commercial capacity. The proposed treatment standard of recovery also is not feasible. Although we recover some acid from the very concentrated corrosive streams, this 752 million gallons per year represents the recovery residues and all other non-concentrated acid streams that are not amenable to recovery. As such, on-site treatment is the only practical option, and that cannot be accomplished by the

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

effective date of this final rule (May 8, 1990), primarily because of the requirement that neutralization form insoluble salts.

Currently all of the corrosive wastewater at the R and H Houston plant is treated in tanks and other non-land units. The neutralization forms sodium sulfate -- a soluble salt. The pH range of the wastewaters is altered so that they are nonhazardous before they enter our land units, which are impoundments. After various treatment processes in the impoundments, the wastewaters are discharged in accordance with the effluent limitations in our NPDES permit. At Houston, we have spent about $16 million to construct wastewater treatment tanks and other non-land units to ensure that our land units only receive nonhazardous waste and to comply with the increasingly stringent NPDES requirements.

Our wastewater treatment system would have to be substantially overhauled to comply with the proposed treatment standards. R and H would have to: (1) install numerous neutralization tanks and controls to achieve a pH of 6 to 9 and devote substantial manpower to oversee the neutralization operations; (2) change the neutralizing agent from one where we add sodium hydroxide to one where we add lime; (3) install expensive lime handling and solids separation facilities; (4) terminate use of biological treatment of the organics in the wastewater or remove the insoluble salts prior to such biological treatment because the insoluble salt, which would now be formed

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

from using lime, would inhibit biological oxidation; (5) dispose of about 220,000 wet tons per year of the insoluble sludges, much of which would be contaminated with organics and could not be recovered even if there were an adequate market for clean insoluble sludges, which there is not; and (6) restructure our transportation, storage and sludge dewatering systems to handle the large volumes of lime and the massive volumes of insoluble sludges generated by using lime.

These changes cannot be accomplished by May 8, 1990. The capital costs of these changes at the Houston plant alone would likely be between $20 and $40 million. The additional annual operating costs to generate and handle the 220,000 wet tons of sludges and dispose of them off-site (since we do not have the space on-site for such enormous sludge quantities) would conservatively be $7 million per year ($2 million for on-site handling of lime and sludges; $2.5 million for off-site transportation; $2.5 million for off-site disposal). As will be discussed later in this section, the environmental benefits of these expensive changes are negligible.

B. Solutions

(1) EPA should set the treatment standards for corrosive wastewater at the characteristic parameters -- pH between 2 and 12.5 and no restriction on formation of soluble salts.

The most direct solution to the corrosive wastewater problem, and the solution which, in our view, is legally

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

mandated, is to require treatment, at most, to the corrosive characteristic parameters. In other words, the treatment standard should be revised to a pH between 2 and 12.5 and there should be no restriction on the formation of soluble salts. By definition, since the wastewater in this range is not a RCRA "hazardous" waste, it does not present a significant hazard even if improperly managed. See RCRA § 3001(a). Moreover, as discussed later in these comments, EPA has no legal authority to require treatment beyond parameters at which the waste is nonhazardous.

EPA may counter this jurisdictional argument by saying that Congress intended treatment to the lowest BDAT levels even if that is beyond parameters at which the waste is considered hazardous. But this is clearly not the case with respect to corrosive wastes. Indeed, the legislative history shows that Congress authorized EPA to allow continued in-ground neutralization without any pretreatment. Specifically, the House Report provides:

> Where land disposal is allowed, the Committee intends the Administrator to require best management practices that include treatment, not just containment of cleanup. Another example would be the continued use of neutralization basins to render corrosive wastes non-hazardous prior to additional treatment or disposal. [In contrast,] [a]n example of where a pretreatment requirement is appropriate prior to land disposal is the metal finishing industry.

H.R. Rep. No. 198, 98th Cong., 1st Sess., pt. 1, at 38 (1983) (emphasis added). The House Report also provides that "the

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

Administrator might find that a [land disposal] prohibition is not appropriate for all corrosive waste, but only for corrosive waste above a specified pH." Id. at 33.

EPA cannot contend that Congress required treatment standards that are more strict than the corrosive characteristic levels when the legislative history shows that Congress was willing to allow continued in-basin neutralization of corrosive waste. Indeed, the only reference to treatment of corrosive waste in the legislative history is that EPA could require "neutralization of acidic wastes as a condition of land disposal." Id. at 38. This does not say that corrosive wastes must be neutralized, or must be neutralized beyond a 2 to 12.5 pH range and to an insoluble salt form. Such an interpretation would be highly questionable given Congress' position that EPA could continue to allow in-basin neutralization, and given the fact that neutralization of a hazardous corrosive waste is commonly understood in RCRA as achieving a pH of between 2 and 12.5.

(2) EPA should, at least, adopt an interim treatment standard for corrosive wastewaters at the characteristic parameters -- pH between 2 and 12.5 and no restriction on formation of soluble salts.

R and H steadfastly believes that EPA has no legal authority to require treatment of a waste beyond the point at which it becomes nonhazardous. Nonetheless, EPA has requested comment on the practical necessity of interim treatment standards

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

at the characteristic parameters, and on the environmental justification for the proposed standard of pH between 6 and 9 and insoluble salts. We will address these practical and environmental issues below, but we in no way wish to infer that EPA can disregard its lack of legal authority to require treatment of a waste beyond the point at which the waste becomes nonhazardous.

First, EPA requests comment on whether to adopt treatment standards at the characteristic parameters on an interim basis, particularly in light of the implementation problems. 54 Fed. Reg. at 48,491/2. EPA would be disregarding reality if it did not, at least on an interim basis, set the treatment standards at the characteristic parameters (pH between 2 and 12.5 and no restriction on soluble salts). R and H cannot comply by May 8, 1990 with the proposed treatment standard of pH of 6 to 9 and insoluble salts through on-site neutralization. Compliance would necessitate huge changes to our wastewater treatment and sludge management system which we have summarized above.

Regarding off-site commercial treatment capacity, EPA's data base shows adequate capacity for corrosive wastewaters -- 22 million gallons generated per year versus 36 million gallons of neutralization capacity per year. See 54 Fed. Reg. at 48,475, Table III.B.1(c). But as EPA admits, the generation data only include wastewaters that are still hazardous when they reach a surface unit. See 54 Fed. Reg. at 48,472/1. Thus, for example,

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

our Houston plant's 752 million gallons per year of corrosive wastewaters which are hazardous at point of generation but not at point of disposal were not accounted for in EPA's data base. This plants generation volume alone is 21 times more than the total volume of treatment capacity (36 million gallons per year) throughout the United States, according to EPA's data.

R and H's Houston plant is just one of many plants that generate massive volumes of corrosive wastewater. In our experience, most of this wastewater is not currently being neutralized to form insoluble salts. There simply is not enough commercial or on-site capacity for the huge volumes of corrosive wastewaters that are generated in the U.S.

Even if there were commercial facilities that could handle the corrosive wastewaters from our Houston plant, each day we would have to send approximately 103 rail tank cars or 515 tank trucks of this water to the off-site facilities. Special corrosion resistant tank cars and tank trucks would have to be used, and we doubt that an adequate supply is available throughout the United States. Moreover, our transportation facilities could not accommodate this volume by May 8, 1990.

Granting a two-year capacity variance for corrosive wastewaters would not provide adequate relief. This is because the variance waste could still not be placed in R and H's impoundments since they do not have double-liners and leachate collection systems. Indeed, there are very few, if any, double-

Docket Number: LD12-00194 (continued)

Commenter: Rohm and Haas Company

Comment: (continued)

lined neutralization impoundments in the U.S. chemical industry. 1/

Thus, the only alternative to noncompliance or plant shutdowns is to adopt interim treatment standards at the characteristic parameters of pH between 2 and 12.5 and no restriction on formation of soluble salts. In R and H's case, these interim standards would need to be retained for three to five years until the necessary changes could be made to our wastewater treatment system to meet the proposed standard, assuming money were no object.

(3) **If EPA does not revise the treatment standard for corrosive wastewater to the characteristic parameters, EPA should allow neutralization to form sodium sulfate.**

The biggest problem with the proposed treatment standard for corrosive wastewaters is the requirement to form insoluble salts. EPA gives as its justification a single statement that the soluble salts "could potentially have adverse impacts on freshwater ecosystems." See 54 Fed. Reg. at 48,423/2. But there is no substantiation of this concern, and at least with respect to sodium sulfate (which is the residue from our

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1/ EPA could provide some relief, however, if it were to grant a variance and also rule that neutralization impoundments will be deemed to satisfy the RCRA § 3004(o)(2) requirement of providing equivalent protection to double liners and leachate collection systems. EPA suggested that this might be true for neutralization basins because the acids and bases are neutralized and if any water migrates out of the unit, it would be innocuous. See 51 Fed. Reg. at 40,605 (1986) and 53 Fed. Reg. at 31,186/1 (1988).

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Comment: (continued)

neutralization), this concern is directly contradicted by the Agency's recent delisting of sodium sulfate.

About six months ago EPA delisted sodium sulfate salt solution (one form of soluble salts) from the Section 313 list of toxic chemicals. See 54 Fed. Reg. at 25,850 (1989). At that time EPA concluded that sodium sulfate does "not meet the listing criteria related to . . . environmental toxicity" and that "available data do not demonstrate that [sodium sulfate] causes or can reasonably be anticipated to cause significant adverse health or environmental effects." Id. Further, EPA specifically rejected a comment opposing the delisting on the grounds of hazards to fish and wildlife. EPA said that it had conducted a review of this specific issue and concluded that there would be no harmful effects. Id. at 25,851/1.

Any concern that soluble salts could adversely affect fresh water ecosystems should be further diminished for two reasons. First, neutralized wastewater is often discharged into brackish surface waters which are unsuitable habitats for freshwater ecosystems. For example, the Houston Ship Channel into which we discharge has a TDS level of 12,000 mg/l, a chloride level of 6,500 mg/l, and a sulfate level of 900 mg/l. This is brackish water, equivalent to 34% seawater, and uninhabitable by freshwater ecosystems. Our discharge increases the sulfate concentration by less than 3%, which has no effect on this already brackish water.

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Commenter: Rohm and Haas Company

Comment: (continued)

The lack of impact is further supported by effluent biomonitoring which we have done quarterly for over five years at our Houston facility. This biomonitoring for acute effects of salinity and other parameters was done as part of Region VI's second-round permitting requirements. The results consistently show no impact from salinity in the discharge. See Permit No. TX0056529, Part III, Item 5.

Second, even if salinity of the surface waters is low, because the discharge is often a "drop in the bucket" there will almost always be no effect. For example, at our Bristol, Pennsylvania plant, we discharge into a portion of the Delaware River that has a salinity of about 25 ppm. Our discharge has a salinity of about 100 ppm. But the volume of the discharge is so small (about 2 ft.^{3} /sec.) as compared to the flow of the river (3000 ft.^{3} /sec) that there is less than a .07% change in the salinity of the river caused by our discharge.

In parts of the country where the salinity and volume of the surface water are extremely low it has been our experience that EPA or individual states will include salinity parameters in NPDES permits if the discharge could negatively impact water quality. EPA should continue to use its authority under the Clean Water Act to address directly these situations. EPA should not broadly prohibit all soluble salts from corrosive wastewater treatment when the problem, if it exists at all, is limited.

Another major problem EPA has not fully considered is what will be done with the massive quantities of sludges that

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Commenter: Rohm and Haas Company

Comment: (continued)

will result if insoluble salts must be formed. EPA says that neutralizing one gallon of concentrated sulfuric acid with lime to form insoluble salts results in 19 pounds of insoluble sludges. See 54 Fed. Reg. at 48,423/2. Based on the concentrations in the acid we neutralize at Houston and an average volume of 2,060,000 gpd, we expect to generate 220,000 wet tons of sludge a year, which is the equivalent of a 75 foot high pile on a football field.

About 80,000 wet tons per year of this sludge would contain organics. This organic sludge could not be recovered for gypsum or otherwise without cost-prohibitive treatment to remove the organics. All of this sludge would have to be disposed of in a nonhazardous waste landfill or waste pile, and we are not sure that this large capacity is available. The remaining 140,000 tons per year of the sludge which does not contain organics theoretically could be recovered for gypsum, if there are no other impurities. In reality, however, there is an inadequate recycling market today for even pure anhydride sludges.

An even worse air emission problem arises if the sludges contain listed wastes or would fail the upcoming toxicity characteristic. These sludges could not even be stored in a waste pile until they are pretreated to the applicable land disposal restriction treatment standards. If the wastes are hazardous because they contain organics, this treatment most likely will entail incineration. Incineration of sulfate and nitrate sludges could result in very significant emissions of SO_2

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Commenter: Rohm and Haas Company

Comment: (continued)

and NO_x. Moreover, the need to incinerate these sludges would further stress the inadequate incineration capacity that exists today.

Additionally, to neutralize all the corrosive wastewater in the U.S., enormous quantities of lime or soda ash would have to be mined, or ferric and aluminum salts would have to be mined or manufactured. The mining and production of these chemicals is not without environmental problems, including resource depletion.

EPA should consider the comparative risks of the insoluble salt treatment standard it proposes. The sludge management complications, the air emissions from sludge incineration, the stress on incineration capacity, and the mining of neutralizing agents present significant problems which EPA should weigh against the negligible impact, if any, that sodium sulfate would have on freshwater ecosystems.

There are numerous other practical problems that would result if we are forced to form insoluble salts. First, at Bristol and in one of our wastewater treatment systems in Houston, we neutralize corrosive wastewater to where it is nonhazardous waste and then place it in biological lagoons where bacteria destroy trace organics to meet our NPDES limits. If we start putting insoluble salts into the lagoon it will spoil the bacterial system. The precipitation of $CaCO_3$ in the basin cannot be tolerated since the inert fraction of the mixed liquor solids will increase with time due to accumulation and could result in

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Commenter: Rohm and Haas Company

Comment: (continued)

A less-preferred alternative to EPA allowing formation of sodium sulfate is to provide for generic exceptions. Specifically, EPA could require insoluble salts except when (1) the wastewater discharge would not measurably affect the salinity of the surface water because of the background surface water salinity and/or the relative volumes of the discharge to the surface water; and (2) where formation of insoluble salts would interfere with biological treatment.

EPA has authority to establish these generic exceptions and could apply them through permits, just as EPA proposes for injection of corrosive wastewaters into underground wells. See 54 Fed. Reg. at 48,423/1. By including these exceptions in the treatment standards, EPA can also avoid having to process numerous treatability variances, by May 8, 1990, for the many facilities that treat corrosive wastes and form soluble salts.

(4) In addition to allowing formation of sodium sulfate, EPA should allow very limited excursions from the 6 to 9 pH range, such as are allowed under NPDES permits.

As discussed earlier, EPA has no legal authority to require treatment of a wastewater to a pH range of 6 to 9 when the wastewater has been treated to a nonhazardous pH level of between 2 and 12.5. If EPA, nonetheless, finalizes the treatment standard at pH between 6 and 9, it should allow for limited excursions to the 6 to 9 pH range. The excursions could be limited in the same manner as they are under NPDES permits, where 7 hours and 12 minutes of excursions are allowed per month. See

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Commenter: Rohm and Haas Company

Comment: (continued)

40 C.F.R. Part 122. This limited flexibility is needed, particularly at facilities with batch operations.

In batch processes, each wastestream has a unique pH and volume level and may contain other constituents that interfere with neutralization. The amount of base or acid that must be added to neutralize the wastestream, the flow rate, and other timing factors will vary for each wastestream. Because of buffering, the pH level may plateau and then spike in unpredictable ways. For all of these reasons, every grab sample of the neutralized wastewater almost certainly will not be between a pH of 6 to 9.

Thus, EPA should adopt a treatment standard and enforcement approach that accounts for the variability and buffering problems. A single grab sample is inappropriate. We believe an NPDES approach is much more realistic and has a history of feasibility.

(5) EPA should clarify that streams from in-process, in-pipe neutralization are not subject to the land disposal restrictions unless the discharge from the pipe is hazardous.

Often base and acid streams are combined entirely in pipes in or leading directly from the process to form a neutralized process water. The streams are not accumulated or treated in tanks or in any other unit prior to the in-pipe neutralization. If the point of generation for this water is the point at which each base and each acid stream goes into the pipe

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Commenter: Rohm and Haas Company

Comment: (continued)

prior to neutralization, then under this proposal, the acid and base streams would be a hazardous waste that would have to be further treated to the treatment standard of pH between 6 and 9 and insoluble salts. If, however, EPA clarifies that the point of generation is where the water exits the neutralization pipes, then the water would only be hazardous and subject to the proposed treatment standard if the commingling of the base and acid streams in the pipes does not achieve a pH of between 2 and 12.5.

R and H urges EPA to clarify that the point of generation for in-process, in-pipe neutralization is where the water exits the pipe as opposed to where it enters the pipe, provided there has been no prior accumulation of the water in tanks. Such a clarification would be consistent with EPA's prior statements regarding the point of generation. EPA has said that the point of generation generally occurs when materials "begin to be accumulated or stored for disposal, re-use or reclamation." See 45 Fed. Reg. at 33,095/3 (1980). In that same rule, EPA gave four examples of the point of generation for a waste acid. In all cases, it was the point at which the acid exited the pipe and went into a treatment or storage unit, as opposed to the point at which the acid entered the pipe from the manufacturing reaction. Id. at 33,096/1.

Such an interpretation would also be consistent with EPA's totally-enclosed treatment facility exemption from permitting and the policy behind that exemption. EPA said it was

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Commenter: Rohm and Haas Company

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adopting the exemption because it wanted to encourage totally enclosed treatment since it represents the "optimum in good waste management practices." See 45 Fed. Reg. at 33,218/2 (1980). Moreover, EPA said that these facilities would be difficult to permit because "many are indoors, are part of complicated plumbing systems which do not fall within RCRA's jurisdiction, and do not have clearly defined starting and end points." Id. (emphasis added). 2/

Similarly to encourage in-process neutralization and to avoid jurisdictional problems, EPA should clarify that the point of generation for in-process, in-pipe neutralization is where the water exits the pipe as opposed to where the water enters the pipe, provided there has been no prior accumulation of the water in tanks.

2/ One could argue that the point of generation for base and acid wastes must be before the totally enclosed treatment facility because otherwise there would be no need for a permitting exemption. This does not follow since the totally enclosed treatment exemption can apply to acid and base streams that are accumulated in tanks prior to neutralization. In such cases, the point of generation is before the totally enclosed treatment facility since there has been accumulation prior to treatment. Moreover, for purposes of land disposal restrictions, EPA has broad authority to provide that base and acid streams are not subject to the land disposal restrictions unless they are still corrosive after they exit the pipes.

CHAPTER 5

D003 REACTIVE CHARACTERISTIC WASTES

The Agency received five comments (Atlas Environmental Services Incorporated (15), Reactive Waste Services, Inc. (23, L0170), Hazardous Waste Treatment Council (HWTC; 172), Sterling Chemicals (197) and HWTC (L0247)) addressing capacity-related issues associated with D003 reactive characteristic Wastes. Three commenters (Atlas Environmental Services Incorporated (15), Reactive Waste Services, Inc. (23, L0170) and HWTC (172)) addressed the explosive wastes subcategory, Sterling Chemicals (197) addressed cyanide wastewaters, and HWTC (L0247) addressed the sulfide wastes subcategory. The commenters addressed the following three issues:

- Recommendation For A Two-Year National Capacity Variance For D003 Explosive Wastes To Facilitate The Development Of Commercial Incineration Capacity;
- Request For A National Capacity Variance For D003 Cyanide Wastewaters If EPA Does Not Change The Proposed Standards; and
- EPA Must Not Promulgate A Capacity Variance For D003 Sulfide Wastes.

These issues are discussed in detail in the following sections.

5.1 Recommendations For Variance For D003 Explosive Reactive Wastes

Summary:

Three commenters (Atlas Environmental Services Incorporated (15), Reactive Waste Services, Inc. (23, L0170) and Hazardous Waste Treatment Council (HWTC; 172)) suggested that EPA should grant a two-year national capacity variance to allow for the permitting of new facilities, and should specify incineration as BDAT for a wide range of D003 wastes.

Atlas Environmental Services Incorporated (15) stated that a commercial reactive (explosive) waste incinerator facility is in the process of being permitted in the state of Missouri. This commenter said that RCRA Part A and Part B permit applications had been submitted to the Missouri Department of Natural Resources for a commercial reactive waste incinerator specifically designed to deactivate explosive materials generated by the U.S. Department of Defense and the explosive and aerospace manufacturing industry. This commenter was mainly responding to the statement made by EPA in the proposed rule that "... such units are not typically found at commercial incineration facilities..." and wanted to remind the Agency that a commercial reactive waste incineration facility will soon be on-line.

Reactive Waste Services, Inc. (23 and L0170) requested that the Agency designate incineration as BDAT for selected D003 explosive wastes with May 8, 1992 as the effective date. This commenter stated that they had filed a RCRA incinerator permit application with EPA Region VII, and that if this permit is approved the associated facility will provide commercial explosive waste incineration capacity by December 30, 1991. This commenter also stated that RCRA Part A and Part B permit applications for rotary kiln incinerators dedicated to thermal destruction of D003 explosive wastes will be submitted by this commenter to several state agencies within the first half of 1990. This commenter also stated that open burning and open detonation (OB/OD) is both environmentally unsound and legally at odds with the statute's requirement for BDAT treatment.

The Hazardous Waste Treatment Council (HWTC; 172) suggested that EPA should allow a two-year capacity variance for a wide range of D003 explosive wastes. This commenter also suggested that the Agency should allow a minimal amount of OB/OD during the interim, and allow for the storage of such waste residuals (for applicable subcategories) until such time as proper treatment and disposal facilities are available. The commenter also expressed the view that OB/OD of D003 explosive wastes is not protective of the environment and does not comply with statutory mandates, and supported the comments of the above commenters, namely, Reactive Waste Services and Atlas Environmental Services.

Response:

EPA is allowing incineration as an appropriate deactivation technology for D003 explosive wastes. Since there is adequate capacity from other deactivation technologies for D003 explosive wastes, EPA is not granting a national variance. EPA also acknowledges the data submitted by these commenters suggesting the availability of future (after 1990) commercial incineration capacity. (As noted elsewhere in the record, EPA is not reopening the open burning/open detonation issue in this rule.)

Comments:

The comments requesting variance for D003 explosive wastes are presented in the following order:

- Reactive Waste Services, Inc. (23: pp. 13, 15-16 and L0170: p. 2);
- Atlas Environmental Services Incorporated (15: p. 1); and
- Hazardous Waste Treatment Council (HWTC; 172: p. 50).

Docket Number: LD12-00023

Commenter: Reactive Wastes Services, Inc.

Comment:

A RCRA Incinerator permit application recently filed with EPA Region VII suggests that commercial explosive waste incineration will be available by December 30, 1991 to deactivate via incineration the D003 Subcategory Explosive Waste. In addition, the Commenter anticipates submitting RCRA Part A and Part B Permit Applications to several State Agencies within the first half of 1990 for rotary kiln incinerators dedicated to the thermal destruction of those D003 Explosive Waste Sets identified in Table 1. Additionally, the Commenter is aware that two Companies are preparing RCRA permit applications to incinerate their own explosive wastes for submission to the authorized State Agencies in Utah and Illinois. EPA is well aware of the waste disposal industry's ability to provide capacity when it becomes needed. . . .

. . . The Commenter respectfully requests the Agency designate INCINERATION AS BDAT for the D003 Explosive Waste Sets A and B. The Commenter respectfully request the Agency designate the effective date for Incineration as BDAT for the D003 Explosive Waste Sets as May 8, 1992. These two requests are based on the following facts:

1. Open Burning/Open Detonation of Explosive waste constitutes land disposal as defined by RCRA Section 3004(k).

2. Open Burning/Open Detonation of Explosive wastes violates RCRA Section 3004(d)(1) and 3004(g)(5) which prohibits the migration of hazardous constituents from the disposal unit.

3. Incineration of Explosive Wastes insures compliance with the HSWA by substantially diminishing the toxicity of the waste and the likelihood of migration of hazardous constituents from the waste.

4. Incineration of Explosive Wastes insures compliance with the HSWA by minimizing the short-term and long-term threats to human health and the environment through stringent control of emissions containing Products of Incomplete Combustion, Carcinogenic and Non-Carcinogenic Metals and HCl in order to assure the cancer risk to the most exposed individual does not exceed 1 in 100,000.

5. Incineration of Explosive Wastes furthers the Statutory Goals of Waste Minimization and Recycling.

6. Incineration of Explosive Wastes is a Demonstrated Technology and has been the leading technology selected by the DoD to effectively and safely deactivate its own explosive wastes and remediate its own facilities.

Docket Number: LD12-00023 (continued)

Commenter: Reactive Wastes Services, Inc.

Comment: (continued)

7. The National Disposal Site Candidate Waste Stream Constituent Profile Report[9], prepared under EPA Contract in 1973, stated that in most cases the technique of Open Burning Explosives and Propellants was unsatisfactory and controlled incineration in a rotary kiln was the preferred method of disposal.

8. Application of Best Engineering Judgement and Transfer of Treatment Standards for the wastes within the two Sets of the D003 Explosives Subcategory allows the Agency to designate Incineration as BDAT for the D003 Explosive Sets without testing the performance of BDAT on every waste. This mechanism also allows for the addition of other D003 Explosive Wastes to the two sets or creation of addition Sets as additional knowledge regarding the safe incineration of explosives is acquired, thereby further protecting human health and the environment from the uncontrolled release of hazardous constituents.

9. Commercial Incineration of D003 Explosive Waste will be available by December 30, 1991. RCRA Section 3004(h)(2) provides the legal mechanism by which the Agency may designate an alternate effective date to the land disposal prohibitions based on national capacity/commercial availability of the Best Demonstrated Available Technology.

10. Open Burning/Open Detonation of Explosive Wastes allows the uncontrolled release of hazardous constituents including products of incomplete combustion (PIC), Carcinogenic and Non-Carcinogenic Metals and HCl into the environment potentially subjecting the most exposed individual to a greater than 1 in 100,000 risk of death by cancer.

11. Deactivation via Open Burning/Open Detonation is the ONLY treatment technology proposed to be designated as BDAT that allows the uncontrolled release of untreated Hazardous Constituents into the air, soil, surface water, groundwater, food chain, and ultimately the human population[10].

Docket Number: LD12-L0170 5-6 D003 Reactive Characteristic Wastes

Commenter: Reactive Waste Services, Inc

Comment:

2. Incineration Capacity for D003 Explosive Waste

The Commenter noted upon review of the Docket material received from EPA, that Atlas Environmental Services (AES) via their December 6, 1989 comment has a RCRA application pending with the State of Missouri, Department of Natural Resources for a commercial reactive waste incinerator facility. According to the AES comment, the incinerator is "specifically designed to environmentally deactivate explosive materials generated by the U.S. Department of Defense as well as the explosive and aerospace manufacturing industry". The recent filing of the RCRA incinerator permit application suggests that commercial explosive waste incineration will be available by December 30, 1991 to deactivate via incineration the D003 Subcategory Explosive wastes.

The Commenter anticipates submitting RCRA Part A and Part B Permit Applications to several State Agencies within the first half of 1990 for rotary kiln incinerators dedicated to the thermal destruction of those D003 explosive waste sets identified in Table 1. Additionally, the Commenter is aware that two Companies are preparing RCRA permit applications to incinerate their own explosive wastes. These applications will be submitted to the authorized State Agencies in Utah and Illinois. EPA is well aware of the waste disposal industry's ability to provide capacity when it becomes needed.

III. CONCLUSION

RCRA Section 3004(h)(2) provides the legal mechanism for the implementation of a two-year variance based on the lack of sufficient treatment capacity. The Commenter anticipates, based on the permit application currently pending with the Missouri Department of Natural Resources and the Applications the Commenter anticipates submitting in the near future, that the capacity will be commercially available by the end of the two-year variance, i.e. May 8, 1992. The Commenter noted that because the capacity to treat much of the wastes covered by the Third Third Proposed Regulation does not exist at the present time, the Agency is currently proposing to grant a two-year extension from the land disposal ban to more than 75 percent of the wastes.

For the foregoing reasons, RWS respectfully urges EPA to act expeditiously in revising the proposed Land Disposal Restriction for Third Third Scheduled Wastes to designate incineration as BDAT for selected D003 Explosive wastes and by granting a two-year variance to the May 8, 1990 effective date.

Docket Number: LD12-00015

Commenter: Atlas Environmental Services Incorporated

Comment:

RE: 40 CFR Part 148, 261, 264, 265, 268, and 271.
Land Disposal Restrictions for Third-Third Scheduled Wastes; Proposed Rule.

Contained within the above proposed rule, Section III A.4.d.(3), Federal Register Page 48426, Volume 54, No. 224, dated November 22, 1989; proposed treatment standards for Ignitable, Corrosive, and Reactive Wastes; Reactive Characteristic Wastes; Explosives Subcategory is the following:

> **"Incineration (of explosive wastes) also appears to be an applicable technology,so long as the incineration units must be specifically designed and fitted with explosive proof equipment. Such units are not typically found at commercial incineration facilities. The agency is aware that these types of units are currently used by the Department of Defense to treat explosive wastes ..."**

The commenter, in response to solicitation by the EPA, respectfully reminds the EPA that a commercial reactive waste incinerator facility is in the permitting process in the state of Missouri. The permit applicant, Atlas Environmental Services, Inc., has submitted a RCRA Part A and Part B permit application to the Missouri Department of Natural Resources for a reactive waste incinerator specifically designed to environmentally deactivate explosive materials generated by the U.S. Department of Defense as well as the explosive and aerospace manufacturing industry.

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

We would recommend that the Agency specify incineration as BDAT for a wide range of D003 as well as KO44-47 wastes, but provide a two year capacity variance to allow for the permitting of new facilities that are being constructed as well as the upgrading of existing DOD facilities that are currently operating albeit under conditions that fall far short of Part 264, Subpart O standards. This is an approach analogous to that employed for KO61 electric arc furnace dust, high zinc category. While the Agency and the nation may have to tolerate some limited OB\OD during the interim as a method to dispose of these wastes, protection of the environment and compliance with HSWA mandates that the least amount of OD\OD be allowed in the interim. The Agency can use its authority under RCRA 3004(j) codified at 40 C.F.R. 268.50 to allow for the storage of such waste residuals to facilitate proper treatment and disposal. While long term storage of these wastes may not be suitable for all subcategories, it is certainly applicable to munitions, cartridges, blasting caps, detonators, primers, etc., which are amenable to longer shelf life. In addition, we cross reference and support the comments submitted on this issue by Atlas Environmental, and HWTC member firm, and the comments of Reactive Waste Services, a non-HWTC firm.

5.2 Request for A National Capacity Variance For D003 Cyanide Wastewaters

Summary:

Sterling Chemicals (197) requested a national capacity variance for D003 cyanide reactive wastewater, if its request for reconsideration of BDAT standards failed. This commenter stated that its facility generates about 6 million gallons of D003 cyanide wastewaters per year. The wastewater generating unit began operations after 1986 and, hence, these volumes were not included in the 1986 TSDR Survey. These wastewaters are treated in tanks, mixed with other wastewaters in a surface impoundment and then transferred to a local POTW where it undergoes biological treatment before being discharged to surface water. This commenter requested that the Agency grant a national capacity variance if the BDAT standards are not reconsidered, because the commenter alone generates 6 million gallons per year and there is only 2 million gallons of available capacity nationwide.

Response:

Because the final rule requires treatment of D003 cyanide wastewaters to characteristic levels only, EPA believes that this facility will be able to meet the treatment standards and, thus, will not need alternative treatment capacity. Based on the revised standards, EPA has determined that there is adequate alternative commercial capacity for those surface-disposed D003 cyanide wastewaters that do not meet the revised standards and, therefore, is not granting a national capacity variance.

Comment:

The following comment , requesting a national capacity variance for D003 cyanide reactive wastewaters, is presented:

- Sterling Chemicals (197)

Docket Number: LD12-00197

Commenter: Sterling Chemicals

Comment:

b. D003a Surface-treated Wastewaters

Sterling Chemicals generates another characteristic D003a (cyanide reactive) hazardous wastewater from a sodium cyanide manufacturing unit. The wastewater is treated in tanks by hydrolysis and alkaline chlorination to stringent standards to meet pretreatment requirements of a local POTW. The waste is further managed with other wastewaters in surface impoundments after this pretreatment, and undergoes final biological treatment at a POTW prior to discharge to surface waters. The manufacturing unit and wastewater generation have been in existence for less than three years and were therefore not included in the 1986 TSDR Survey. The annual volume of wastewater treated is 6 million gallons.

The table below summarizes performance of the hydrolysis/alkaline chlorination treatment facility for 72 batches of D003a reactive cyanide wastewater in 1989. The control limit cited is the +3 standard deviation limit of the data set.

Constituent (ppm)	Mean	Control Limit	BDAT
Amenable (free) Cyanide	0.21	0.47	0.10
Total Cyanide	5.88	16.82	1.90

Even though this well operated and maintained facility uses BDAT technologies, effluent quality from the facility would not meet the proposed BDAT standards for total and free cyanides. Effluent from the unit is at all times non-hazardous. The proposed BDAT technology in operation at this facility is not currently achieving the suggested level of performance. Sterling Chemicals concludes that the Agency's transfer of F011 BDAT standards is inappropriate. Sterling Chemicals believes that setting BDAT standards for characteristic wastes is inappropriate, as presented in CMA's comments. However, if the Agency insists on setting BDAT standards for this waste, Sterling Chemicals requests that the Agency reconsider the proposed BDAT standards in light of this additional real-world treatment data.

Failing reconsideration of the standard, Sterling Chemicals requests a national capacity variance for this class of hazardous waste. *See* discussion in § A.3. above concerning the questionable value of a variance. This 6 million gallon waste stream for Sterling Chemicals alone would require further treatment to meet the proposed BDAT standards, and the Agency lists only 2 million gallons per year of nationwide available capacity (Table III B.1.(c)).

5.3 EPA Must Not Promulgate A Capacity Variance For D003 Sulfide Wastes

Summary:

Hazardous Waste Treatment Council (HWTC; L0247) stated that EPA must not promulgate a capacity variance for D003 sulfide waste. The commenter stated that EPA should allow the beneficial use of inorganic sulfide wastes as precipitation agents in the treatment of metal bearing wastes. The commenter suggested that a capacity variance for D003 sulfide waste is unnecessary because of this beneficial use of inorganic sulfide wastes and because incineration capacity is available for the treatment of organo-sulfur wastes.

Response:

EPA has data indicating that 6.677 million gallons per year of D003 sulfide wastes are surface-disposed. EPA agrees with the commenter that there is sufficient capacity for the treatment of surface-disposed D003 sulfide wastes, and, therefore is not granting a national capacity variance for these wastes.

Comment :

The following comment, opposing a capacity variance for D003 sulfide wastes, is presented:

- Hazardous Waste Treatment Council (HWTC; L0247)

Docket Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

2. Sulfides

The HWTC has previously commented on the chlorine dioxide treatment method proposed by Exxon (Docket No. LD12-00056) for reactive sulfides (see HWTC comments on data submitted February 20, 1990). Although it is not clear from these comments why EPA sent this Exxon paper out for capacity comments, the HWTC hopes that EPA is not considering specifying this technology as BDAT. Not only are there flaws in this technology as discussed in our comments of February 20, 1990, but EPA also must allow the use of sulfide waste as metal precipitation agents in treatment of metal bearing waste. Considering this beneficial use of inorganic sulfide waste, as well as available incineration capacity for organo-sulfur waste, EPA must not promulgate a capacity variance for D003 sulfide waste.

6. ARSENIC AND SELENIUM WASTES

EPA received thirteen comments (ThermalKEM/CyanoKEM (59); Hazardous Waste Treatment Council (HWTC; 67); ThermalKEM/CyanoKEM (110); Occidental Chemical Corporation (138); HWTC (172); PPG Industries, Inc. (133); Rhone-Poulenc (207); Unocal Corporation (233); FMC Corporation (256); Penberthy Electromelt International, Inc. (266); American Wood Preservers Institute (L0002); Racon Incorporated (L0023); and HWTC (L0247)) related to surface-disposed arsenic and selenium wastes. Most commenters were concerned about the selection and available capacity of the BDAT for the nonwastewater forms of these wastes. The following issues concerning arsenic and selenium were presented by various commenters:

- No Variance Needed if More Appropriate BDAT Selected;
- Support of Variances for Arsenic and Selenium Nonwastewaters Requiring Vitrification; and
- Available Capacity for Vitrification.

6.1 No Variance Needed if More Appropriate BDAT Selected

Summary:

EPA received five comments (ThermalKEM/CyanoKEM (59), Hazardous Waste Treatment Council (HWTC; 67), ThermalKEM/CyanoKEM (110), HWTC (172), and HWTC (L0247)) disagreeing with the proposed BDAT of vitrification for arsenic and selenium nonwastewaters. These commenters stated that if a more appropriate BDAT were selected, a national capacity variance would be unnecessary for these wastes. Most commenters suggested a stabilization process for these wastes. ThermalKEM/CyanoKEM (110) stated that chemical oxidation followed by stabilization should be the BDAT for arsenic and selenium wastes. Their facility had capacity to manage 13.8 million gallons/year of these wastes using this alternative treatment. HWTC (172) also stated that the BDAT for these wastes should be chemical or thermal oxidation followed by stabilization, and that four member companies have combined capacity of arsenic treatment by stabilization of 80 million gallons/year, which is sufficient to manage the 15.2 million gallons/year of arsenic wastes reported to be land disposed. HWTC concluded that if EPA based BDAT on the technology available now, no capacity variance would be necessary.

Response:

In the proposed rule, EPA proposed to grant arsenic and selenium nonwastewaters a national capacity variance because of a lack of vitrification treatment. EPA received several comments regarding the selection of vitrification as the BDAT for these wastes. Some commenters suggested that other technologies should be the BDAT, and no variance should be granted to arsenic and selenium nonwastewaters.

For arsenic nonwastewaters, EPA has determined that for some arsenic nonwastewaters the standards can be met with by chemical or thermal oxidation to the arsenate form followed by "chemical precipitation with iron salts followed by stabilization." This technology may be inappropriate for all arsenic nonwastewaters because organics are known to interfere with the stabilization process. EPA believes that vitrification will work for all forms of arsenic nonwastewaters, because high temperatures are expected to destroy the organo-metallic bonds, and therefore, its performance is not limited by the presence of organics. Thus, EPA has assigned arsenic nonwastewaters to vitrification for the capacity analysis. EPA estimates that approximately 13 million gallons of arsenic nonwastewaters will require treatment before surface disposal. EPA has determined that there is insufficient capacity for vitrification and has decided to grant arsenic nonwastewaters a variance.

For selenium nonwastewaters, EPA agrees with the commenters that another technology can also be used to reach the treatment standards. EPA has reevaluated standards for selenium nonwastewaters and is now promulgating concentration standards based on stabilization. EPA has determined that there is sufficient stabilization capacity to treat selenium nonwastewaters; therefore, EPA is not granting selenium nonwastewaters a national capacity variance.

Comment:

The comments relevant to this issue are presented in the following order:

- ThermalKEM/CyanoKEM (59);
- Hazardous Waste Treatment Council (HWTC) (67);
- ThermalKEM/CyanoKEM (110);
- Hazardous Waste Treatment Council (HWTC) (172); and
- Hazardous Waste Treatment Council (HWTC) (L0247).

Docket Number: LD12-00059

Commenter: ThermalKEM/CyanoKEM (NUKEM Corporation)

Comment:

To achieve these levels of treatment we recommend chemical and/or thermal oxidation followed by chemical precipitation be established as BDAT for both wastewater and non-wastewater residues. Additional chemical/physical stabilization of the non-wastewater residues may be required depending on waste stream characteristics (i.e., arsenic concentration and other metals present). Therefore, we request that EPA not adopt vitrification as BDAT for most arsenic containing non-wastewater treatment residues.

8. Selection of BDAT based on Vitrification results in an Unnecessary Capacity Variance for Arsenic Wastes

EPA is proposing a two year capacity variance for arsenic waste because of the unavailability of commercial vitrification capacity. If EPA were to base BDAT on the technology presented here, no capacity variance would be needed, because this technology incorporates readily available incineration and/or chemical treatment capacity. This approach therefore would clearly be more environmentally protective.

Docket Number: LD12-00067 Arsenic & Selenium

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

a. Wastes containing arsenic, selenium, thallium. barium, mercury, nickel, lead, chromium, can be stabilized using currently available technology.

..

f. Sufficient data is presented to support an immediately effective numerical BDAT standard based upon stabilization for all wastes which are proposed for recovery methods which are currently unavailable and thus eligible for a two-year extension.

g. A numerical arsenic nonwastewater BDAT standard based upon stabilization should be promulgated as soon as possible. The proposed vitrification standard should be dropped along with the two-year extension.

Docket Number: LD12-00110 6-6 Arsenic & Selenium

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment:

Arsenic Wastes (D004, D010, K031, K084, K101, K102, P010, P011, P012, P036, P038, P103, P114, U136, U204 and U203)

No capacity variance would be necessary for D004 waste if EPA establishes BDAT based on chemical oxidation followed by stabilization. The capacity variance proposed is only necessary because EPA has proposed to establish BDAT on the basis of an obscure technology only partially demonstrated as part of a university research program, and available only on bench scales. This technology is flawed for reasons presented in our comments submitted December 22, 1989. 24e

Our treatment facilities have capacity to manage 13.8 million gallons per year of these wastes, using technology described in our comprehensive submittal of December 22, 1989. 24c d

This capacity is nearly sufficient to manage the 15.2 million gallon/year proposed for these wastes (62,000 tons per year). Additional capacity to satisfy the remaining 2 million gallons per year is available from other treatment companies.

If EPA bases BDAT on this technology available now no capacity variance would be necessary, allowing restriction of these highly toxic wastes immediately on May 9, 1990 as opposed to two years later. This is clearly more protective of human health and the environment.

Docket Number: LD12-00110 (continued)

Commenter: ThermalKEM/CyanoKEM (NUKEM)

Comment: (continued)

3. D004 Arsenic Bearing Wastes

ALTERNATE TECHNOLOGY THAN THE PROPOSED VITRIFICATION IS MORE APPROPRIATE FOR D004, D010, K031, K084, K101, K102, P010, P011, P012, P036, P038, P103, P114, U136, U204, U205 WASTES

The proposed arsenic and selenium BDAT based on studies performed at the University of Montana on Vitrification is not best demonstrated achievable technology. For these wastes we urge EPA to consider the demonstrated, available technology used at our two operating facilities. We have provided comprehensive data and process descriptions in a report submitted to the docket for LD12 on December 22, 1989. This report describes treatment of arsenic bearing inorganic waste streams, as well as incineration combined with scrubber water treatment for organo-arsenic waste. The treatment data provided supports a BDAT standard for non-wastewater residuals of 2.99 PPM, lower than the proposed standard of 5.6 PPM based on vitrification. The untreated waste contained 40% arsenic, higher than the waste used to evaluate vitrification technology. Since a 2.99 PPM standard is below the characteristic level, EPA should clearly establish this standard as BDAT.

In our report submitted December 22, 1989, a critique of the vitrification technology is provided, that details 12 major problems with this proposed BDAT. One of the most serious is that no accounting has been made for the arsenic emitted to the air during the calcination process.

Since vitrification has not been operationally demonstrated to be applicable to arsenic treatment and stabilization for aqueous inorganic wastes, (as well as organic liquids and solids) it should not be considered as BDAT for these wastes. However, because chemical or thermal oxidation followed by aqueous chemical precipitation is being used commercially as a reliable full scale treatment and stabilization process, this technology should be considered BDAT for these waste

streams. Further, no capacity variance would be needed, since these technologies are readily available now.

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

Since vitrification has not been operationally demonstrated to be applicable to arsenic treatment and stabilization for aqueous inorganic wastes, (as well as organic liquids and solids) it should not be considered as BDAT for these wastes. However, because chemical or thermal oxidation followed by aqueous chemical precipitation is being used commercially as a reliable full scale treatment and stabilization process, this technology should be considered BDAT for these waste streams. Further, no capacity variance would be needed, since these technologies are readily available now.

C. D004/D010 (And Other As and Se U, K and P Codes In Third Thirds Proposed Rule

No capacity variance will be necessary for D004 waste if EPA establishes BDAT based on chemical oxidation followed by stabilization. The capacity variance proposed is only necessary because EPA has proposed to establish BDAT on the basis of an obscure technology only partially demonstrated as part of a university research program, and available only on laboratory bench scales. This technology is flawed for reasons discussed in the section on characteristic waste.

Four of our member companies have provided EPA data on the treatability of these wastes in the form of comments to the third thirds. The combined capacities of our member companies for treatment of arsenic by stabilization is in excess of 80

Docket Number: LD12-00172 (continued)

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment: (continued)

million gallons per year. This capacity is sufficient to manage the required capacity of 15.2 million gallon/year for these wastes (62,000 tons per year).

If EPA bases BDAT on the technology available now at these companies, no capacity variance will be necessary, allowing restriction of these highly toxic wastes immediately on May 9, 1990 as opposed to two years later. This is clearly better for human health and the environment.

For these wastes, the HWTC urges EPA to go with the demonstrated and available technology provided by four of our members. In addition, several of our incineration member companies have the ability to incinerate organo-arsenic, and treat the resultant scrubber water for arsenic.

Docket Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council

Comment:

D. D004 Waste and D010 Wastes

The proposed capacity variance for arsenic and selenium wastes is totally unnecessary and an outfall of the decision to base BDAT on vitrification technology that is unavailable and unproven. The HWTC has already provided extensive comments highlighting the flaws in the vitrification technology evaluated by EPA (see HWTC comments of January 8, 1990, pg. 30-33). In addition, several HWTC member companies have submitted data on the stabilization of D004 waste showing superior performance to vitrification for equivalent concentrated arsenic waste (Treatment standards of 1 PPM Arsenic are achievable as opposed to the 5.6 PPM (for vitrification). The HWTC comments of February 20, 1990 on data submittals summarizes all of the data comments submitted by our member companies, and supports the fact that EPA has sufficient chemical precipitation and stabilization data with which to develop a new BDAT standard for arsenic and selenium waste.

If EPA allows for chemical treatment, precipitation followed by stabilization for arsenic and selenium waste, no capacity variances will be required after May 8, 1990. This is seen by the excess in chemical precipitation and stabilization capacity of 338 million gallons per year and 345 million gallons per year respectively, compared to a required capacity of only 15 million gallons per year (See 54FR 48473-48475). The other arsenic bearing K, U, and P waste codes add less than an additional 2 million gallons/year demand, considering that the organic K waste such as K001 are incinerated and volume reduced prior to ash treatment and stabilization. Many other commenters, including those of Southern Pacific Transportation Company circulated by EPA for capacity comments (LD12-00183), support these conclusions. With respect to K031 arsenic bearing waste, Southern Pacific commented as follows:

> "In contrast to in-situ vitrification, chemical fixation is demonstrated, applicable, and available for treatment of soils, contaminated with K031 wastes."
> (LD12-00183, page 6).

Southern Pacific also discusses the superior performance of stabilization over vitrification in pages 12-15 of their comments. The HWTC concurs with these comments.

6.2 Support Variances for Arsenic and Selenium Nonwastewaters Requiring Vitrification

Summary:

Six commenters (PPG Industries, Inc. (133), Rhone-Poulenc (207), Unocal Corporation (233), FMC Corporation (256), American Wood Preservers Institute (L0002), and Racon Incorporated (L0023)) supported EPA's proposed national capacity variance for arsenic and selenium nonwastewaters if vitrification were to be selected as the BDAT.

PPG Industries (133) supports the BDAT of vitrification, and agrees that a national capacity variance is needed for arsenic and selenium wastes. PPG Industries was concerned that, even after two years, there would still be insufficient capacity for vitrification. Rhone-Poulenc (207) is currently developing the furnace design and auxiliary equipment configuration for vitrification, and also supports the variance to permit further development, testing, and scale-up of vitrification treatment.

FMC Corporation (256) and American Wood Preservers Institute (L0002) do not believe that vitrification meets EPA's criteria for a "demonstrated" technology, but support a variance so that this or an alternate technology can become "demonstrated" and "available" for arsenic sulfide wastes. UNOCAL (233) also does not believe that vitrification is the only acceptable arsenic stabilization procedure, but supports the variance to develop and validate a stabilization process.

Racon Incorporated (L0023) stated that the capacity variance for vitrification processes should be longer than two years. The commenter stated that if there is no capacity in 1990, and construction and permit approval has not begun, there will continue to be a significant capacity shortage in 1992.

Response:

EPA proposed to grant arsenic and selenium nonwastewaters a national capacity variance in the proposed rule because of a lack of vitrification capacity. For arsenic nonwastewaters, EPA concludes that vitrification is the BDAT. EPA acknowledges that other treatments may sometimes be appropriate for these wastes, but these alternate technologies have not been proven capable of meeting the arsenic nonwastewater standard consistently. Because there is insufficient capacity for vitrification, EPA has decided to grant arsenic nonwastewaters a variance.

For selenium nonwastewaters, however, EPA has determined that other technologies can be used to reach the treatment standards. Today, EPA is promulgating concentration standards based on stabilization for selenium nonwastewaters. According to EPA's capacity analysis, there is sufficient stabilization capacity to treat selenium nonwastewaters. Therefore, EPA is not granting selenium nonwastewaters a national capacity variance.

In response to PPG Industries and Racon Incorporated, who expressed a concern that there will continue to be inadequate capacity for vitrification in 1992, EPA does not have the statutory authority to grant a national capacity variance beyond two years. If the commenters find in the future that adequate vitrification capacity does not exist to treat arsenic nonwastewaters, they may want to consider applying for a case-by-case extension as allowed for in 40 CFR 268.5.

Comment:

The comments relevant to this issue are presented in the following order:

- PPG Industries, Inc. (133);
- Rhone-Poulenc (207);
- Unocal Corporation (233);
- FMC Corporation (256);
- American Wood Preservers Institute (L0002); and
- Racon Incorporated (L0023).

Docket Number: LD12-00133 6-13 Arsenic & Selenium

Commenter: PPG Industries, Inc.

Comment:

- D004/D010 Arsenic/Selenium - PPG's glass manufacturing facilities generate flue slag nonwastewater waste material which can contain various combinations of arsenic, cadmium, chromium, lead and selenium metals. Due to the different chemical characteristics of these metals, vitrification appears to be the only feasible treatment method for stabilizing the mixture of metals in slag wastes. PPG supports the proposed two-year national capacity variance for wastes whic have a prescribed standard based on vitrification. However, PPG is unaware of any existing commercially viable vitrification facilities and is concerned that sufficient vitrification treatment capacity will still not be available at the end of the proposed two-year national variance period.

Docket Number: LD12-00207

Commenter: Rhône-Poulenc

Comment:

D. ARSENIC TREATMENT

As EPA is aware, the results of previous arsenic treatment tests using a cement based fixation method increased the volume of sludge containing material for disposal and subjects the sludge to a basic pH environment which could increase arsenic solubility as groundwater attacks the disposed solid. This method results in EP Toxicity Tests that meet the arsenic characteristic level of 5.0 mg/l.

Rhone-Poulenc initiated a study of its own to determine if arsenic containing sludges could be fixed in a more permanent manner to provide a decrease in volume as well as a significantly lower arsenic solubility level as determined by TCLP Test methods.

This study found that a vitrification process using a specific glass formulation region would produce a significantly better method for the disposal of D004 wastes generated in phosphoric acid purification. The fused inert aggregate glass product decreased the volume for disposal by more that 75% even though fixation and fluxing agents were added. The resultant product, when subjected to TCLP methodology, gave soluble arsenic levels significantly below the 5.0 mg/l level.

Rhone-Poulenc is now developing the furnace design and auxiliary equipment configuration to achieve an environmentally sound application of this process. To avoid arsenic loss due to vaporization, a special furnace configuration with a recycling vapor scrubbing system is being investigated. Once this configuration is established, a pilot plant testing program will be required before an operational process testing program will be available for industrial use.

Accordingly, Rhone-Poulenc supports the proposed two-year variance period to permit further development, testing, and scale up.

Docket Number: LD12-00233 Arsenic & Selenium

Commenter: Unocal Corporation

Comment:

> Under EPA's proposed third-third ruling, this waste can no longer be landfilled beyond May 8, 1990, unless it can be treated to an established standard. EPA is proposing in their November ruling a treatment standard of 5.6 ppm for non-wastewater arsenic wastes. This standard was based on a research study using a vitrification (glass encapsulation) process to stabilize high arsenic waste. The vitrification process appears to be viable, but will most likely be very expensive, and it is not currently available on a commercial scale. EPA has recognized this problem, and is proposing in their ruling a two-year national capacity variance for [illegible]

p.

Unocal supports the EPA decision to grant a two-year capacity variance to all of the surface-disposed arsenic wastes. A two-year variance will provide needed time for the development and validation of arsenic stabilization procedures. However, Unocal does not believe that vitrification is the only acceptable arsenic stabilization procedure.

p. 3

We are currently in the process of determining whether other stabilization techniques are capable of treating the catalyst to arsenic concentration at or below the proposed TLCP level of 5.6 ppm. Samples of the catalyst have been sent to three different companies to test their respective stabilization processes. To date, two of the companies, which use multiple phase lime base processes, have indicated that their processes were successful in stabilizing the catalyst to levels below 5.6 ppm. However, so far the testing has only been on a laboratory scale. Additional testing will be necessary for developing the processes to a commercial level.

Nevertheless, it appears that other stabilization processes may be available, and Unocal is proposing that alternate methods that satisfy the specified concentration standards should be included as acceptable treatment procedures.

Docket Number: LD12-00256 6-16 Arsenic & Selenium

Commenter: FMC Corporation

Comment:

We understand the constraints under which the EPA is operating, but we do not believe that the vitrification technology meets EPA's own criteria for "demonstrated" when applied to arsenic sulfide. We do support the two year national capacity variance for the nonwastewater forms of D004. Hopefully, within the time provided by a national capacity variance and, perhaps, case by case extensions, vitrification (or an alternate technology) can become both "demonstrated" and "available" for arsenic sulfide wastes.

Commenter: American Wood Preservers Institute

Comment:

Arsenic BDAT treatment levels for D004 non-wastewaters should remain concentration-based. Although AWPI and SAWP believe that conventional stabilization methods for wood preserving wastes (i.e., addition of cementitious or pozzolanic materials) may achieve the proposed concentration-based level for arsenic, the treatment technology utilized by the Agency (glass vitrification) is neither practical nor readily available. Although most waterborne wood preserving facilities would not benefit from the proposed two-year national capacity variance for surface disposed wastes, AWPI/SAWP is nonetheless supportive of this proposal for two reasons. Arsenical treaters, primarily in the West, utilizing ammoniacal copper zinc arsenate formulations, would receive some benefit from promulgation of the proposed variance. A number of these plants are larger multi-preservative operations that already bear the heavy burdens of K001 management and disposal. Second, we believe that EPA's rationale for the capacity variance is sound. Glass vitrification is an inefficient treatment technology that does not offer sufficient, readily available capacity for the wood preserving industry. Assuming, for example, that the solubility of arsenic in glass is 0.5 percent, 200 tons of glass would be required to solidify a single ton of arsenic.

6.3 Available Capacity for Vitrification

Summary:

Three commenters (Occidental Chemical Corporation (138), Penberthy Electromelt International, Inc. (266), and Hazardous Waste Treatment Council (HWTC; L0247)) specifically discussed the commercial availability of vitrification.

Occidental Chemical Corporation (138), stated that as a generator of D004 nonwastewater, the commenter was unaware of any commercial vitrification process that is available and that can be applied to these wastes.

Penberthy Electromelt International, Inc. (266) stated that vitrification is commercially available from the commenter's company, and therefore, no variance for arsenic and selenium wastes would be needed. The commenter attached a list of 86 all-electric glassmelting furnaces that they had built and stated that capacity can be available in four months after orders for furnaces are placed. Therefore, the commenter believed that a full two-year variance for vitrification is not necessary.

Hazardous Waste Treatment Council (HWTC) (L0247) responded to the comment submitted by Penberthy Electromelt International, Inc. HWTC stated that the experience list of this company does not document a single furnace that has been manufactured and applied to any hazardous waste treatment. HWTC also doubted the availability of furnace equipment to satisfy a vitrification BDAT because, in the commenter's opinion, there are flaws in this technology.

Response:

EPA agrees with Occidental Chemical Corporation (138) that commercial vitrification capacity does not currently exist. EPA has determined, however, that vitrification is the appropriate treatment for arsenic nonwastewaters, and that this technology can be provided on a commercial basis or at generators' facilities.

EPA acknowledges that Penberthy Electromelt International, Inc. (266) may be able to provide vitrification capacity. For the purposes of EPA's capacity analysis, treatment capacity must currently be available. EPA has determined that there is no vitrification currently available at this time. EPA also asserts that a two-year variance is needed because of time needed for equipment procurement, project financing, fabrication and delivery, unit permitting, unit installation, and testing and fine tuning of the process. Because there is insufficient capacity for vitrification and other technologies to treat D004 nonwastewaters, EPA is granting these wastes a two-year national capacity variance.

Comment:

The comments relevant to this issue is the following:

- Occidental Chemical Corporation (138);
- Penberthy Electromelt International, Inc. (266); and
- Hazardous Waste Treatment Council (HWTC) (L0247).

Docket Number: LD12-00138

Commenter: Occidental Chemical Corporation

Comment:

The BDAT treatment standard proposed by EPA (54 Fed. Reg. 48433) is based on vitrification, a hazardous waste stabilization process that is not known to be commercially available. Because the Arsenic/Selenium Background Document was not able to be obtained in time to be reviewed for these comments, OxyChem is at somewhat of a disadvantage. However, as one of only five known generators of a D004 arsenic containing nonwastewater hazardous waste, we are unaware of a commercial vitrification process which can be applied to that waste.

Commenter: Penberthy Electromelt International, Inc.

Comment:

Both arsenic and selenium can be incorporated into glass which is inert and insoluble, whereby the arsenic and selenium are sequestered out of the biosphere permanently. Both technology for doing this, called glassification or vitrification, and the furnaces for doing this are commercially available from the writer's company.

Variance

We comment that the proposed full 2-year variance need not be granted, because our technology and furnace-building capacity are ready to go now. Attached is a list of all-electric glassmelting furnaces we have built since 1949, 86 in total. (We should know what we are doing by now.) We already have a small cold-top melter in our plant in which we can show that the technology is developed and available. This satisfies BDAT.

The capacity can be available in four months after the orders for furnaces are placed.

If EPA feels that there should be some extension of the deadline, there is no need for more than six months.

Docket Number: LD12-00266 (continued)

Commenter: Penberthy Electromelt International, Inc.

Comment: (continued)

PENBERTHY ELECTROMELT INTERNATIONAL, INC.
Seattle, Washington

DESIGN & CONSTRUCTION EXPERIENCE
GLASS ELECTRIC-FURNACE PROJECTS

DATE	GLASS CAPACITY (TONS/DAY)	GLASS TYPE	LOCATION
1988 (designed)	10	hazardous waste	Washington
1985	62	insulator glass	Mexico
1981	6	nuclear waste	Washington
1981	1.2	plutonium lab.	Ohio
1980	4	hazardous waste	Washington
1976	35	container glass	Canada
1974	100	container glass	South Africa
1974	15	lead glass	Italy
1974	10	lighting glass	Italy
1974	6	tubing glass	Italy
1974	20	opal glass	Italy
1974	7	container glass	Israel
1974	6	press glass	Germany
1974	2.4	fiber glass	Oregon
1973	00	container glass	South Africa
1973	8	lighting glass	Italy
1973	18	container glass	Spain
1973	10	lead glass	Mexico
1973	3.5	specialty glass	France
1973	18	press glass	Canada
1972	60	container glass	South Africa
1972	22	container glass	Spain
1972	14	lead glass	Belgium
1972	4	lead glass	Ireland
1972	17	lead glass	Italy
1972	10	lead glass	Germany
1971	35	container glass	Sudan
1971	22	container glass	Spain
1971	23	lead glass	France
1971	50	table glass	Ohio
1971	75	container glass	Tennessee
1971	75	container glass	Tennessee
1970	22	container glass	Spain
1970	120	container glass	South Africa
1970	10	lighting glass	Italy
1970	40	opal boro glass	Ohio
1969	90	container glass	Germany
1969	1	hand glass	United Kingdom
1969	6	tubing glass	Italy
1968	77	container glass	Italy
1968	3	optical glass	Italy
1968	14	hand glass	Germany
1967	60	container glass	Indiana
1967	110	container glass	New Jersey
1967	9	container glass	Israel

Docket Number: LD12-L0247

Commenter: Hazardous Waste Treatment Council

Comment:

The comments by Penberthy Electromelt International, Inc. (LD12-0266) suggest that glass vitrification furnaces can readily be provided. Yet, the experience list of this company does not document a single furnace that has been manufactured and applied to any hazardous waste treatment application. There is serious doubt about the availability of furnace equipment to satisfy a vitrification BDAT considering the many flaws in this technology as previously described in the HWTC January 8, 1990 comments. Further, serious permitting issues exist considering the emissions of volatile arsenic compounds during the precalcining and vitrification processes. Many states are promulgating air toxics regulations that could delay permitting of these devices. The RCRA status of these devices is also questionable for organo arsenic waste, since these devices are not on the approved list of industrial furnaces under 40CFR260.10.

CHAPTER 7

LEAD AND K061 WASTES

EPA received 33 capacity-related comments (GNB, Inc. (34), American Foundrymen's Society, Inc. (AFS; 42), Schuylkill Metals Corporation (82), Kaiser Aluminum (86), Aluminum Recycling Association (ARA; 97), Lead Industries Association, Inc. (LIA; 101), Thomson Consumer Electronics, Inc. (103), Exide (117), Olin Chemicals (129), Laclede Steel Company (134), CIBA-GEIGY Corporation (136), University of Illinois (139), General Motors Corporation (GM; 143), Northwestern Steel and Wire Co. (NS&W; 152), Hammond Lead Products, Inc. (153), Waste Management, Inc. (WMI; 159), the American Iron & Steel Institute (160), Secondary Lead Smelting Association, Inc. (SLSA; 161), RSR Corporation (162), East Penn Manufacturing Co., Inc. (174), Battery Council International (BCI; 178), Lubrizol (184), GNB, Inc. (202); Electric Utilities (204), Vision-Ease (213), American Foundrymen's Society, Inc. (AFS; 222), Owens-Illinois (262), Steel Manufacturers Association (SMA; 274), Specialty Steel Industry of the United States (SSIUS; 276), Amoco (L0020), Hazardous Waste Treatment Council (HWTC; L0034), The American Road & Transportation Builders Association (ARTBA; L0161), and Hazardous Waste Treatment Council (HWTC; L0247)) on lead and zinc wastes. Twenty one commenters (Schuylkill Metals Corporation (82), Kaiser Aluminum (86), Lead Industries Association, Inc. (LIA; 101), Thomson Consumer Electronics, Inc. (103), Exide (117), Olin Chemicals (129), CIBA-GEIGY Corporation (136), Hammond Lead Products, Inc. (153), Secondary Lead Smelting Association, Inc. (SLSA; 161), RSR Corporation (162), East Penn Manufacturing Co., Inc.(174), Battery Council International (BCI; 178), Lubrizol (184), GNB, Inc. (202); Electric Utilities (204), Vision-Ease (213), American Foundrymen's Society, Inc. (AFS; 222), Owens-Illinois (262), Steel Manufacturers Association (SMA; 274), and Specialty Steel Industry of the United States (SSIUS; 276), Hazardous Waste Treatment Council (HWTC; L0247)) requested capacity variances for lead wastes requiring stabilization or thermal recovery of lead. Four secondary lead smelters (Exide (117), Secondary Lead Smelting Association (SLSA; 161), RSR Corporation (162), and East Penn Manufacturing Co., Inc. (174) requested a capacity variance for the slag and matte generated following the smelting process and four commenters Schuylkill Metals Corporation (82), Secondary lead Smelting Association, Inc. (SLSA; 161), RSR Corporation (162), and Battery Council International (BCI; 178) requested a capacity variance for the battery parts stored in staging piles prior to recovery. Three commenters (The Aluminum Recycling Association (ARA; 97), General Motors Corporation (GM; 143) and The University of Illinois (139)) also questioned whether adequate capacity exists for their lead waste, while another commenter (American Foundrymen's Society, Inc. (AFS; (42)) disagreed with EPA's waste quantity estimate.

Regarding K061 wastes, five commenters (Laclede Steel Company (134), Waste Management, Inc. (WMI; 159), the American Iron & Steel Institute (160), Steel Manufacturers Association (SMA; 274) and the Specialty Steel Industry of the United States (SSIUS; 276)) supported an extension of the interim stabilization standard because of insufficient capacity for High Temperature Metals Recovery (HTMR) . Three commenters (Northwestern Steel and Wire Co. (NS&W; 152), Steel Manufacturers Association (SMA; 274) and the Specialty Steel Industry of the United States (SSIUS; 276)) also requested capacity variances because they considered their zinc wastewaters untreatable.

Commenters addressed the following major issues related to lead and zinc wastes:

- Insufficient Capacity to Treat Slag and Matte Generated by Secondary Smelters;
- Insufficient Stabilization Capacity for D008 Nonwastewaters
- Insufficient Thermal Recovery Capacity For D008 Nonwastewaters
- Inadequate Capacity for Lead Nonwastewater Treatment;
- Capacity Variance Requests for Spent Batteries and Battery Parts Used as Lead Feedstocks in Secondary Smelters;
- Insufficient High Zinc K061 Nonwastewater HTMR Capacity;
- Capacity Variance Requests for K061 Wastewaters;
- Underestimation of EP Toxic Waste Quantity From the Foundry Industry and Availability of Adequate Treatment Capacity for This Waste;
- Capacity Variance Request for the Blast Waste Generated From Removal Of Lead-based Paint From Steel Structures
- The Stabilization Standard for K069 Calcium Sulfate Nonwastewater Subcategory

Cannot Be Achieved And Therefore Requires A Capacity Variance;
- Data Submittal On Generation Of K069 In Response to Statement By EPA; and
- Miscellaneous Data Submissions.

7.1 INSUFFICIENT CAPACITY TO TREAT SLAG AND MATTE GENERATED BY SECONDARY SMELTERS

Summary:

EPA received six comments (Exide (117), Secondary Lead Smelting Association (SLSA; 161), RSR Corporation (162), and East Penn Manufacturing Co., Inc. (174), Hazardous Waste Treatment Council (HWTC; L0034), and HWTC; L0247)) on this issue. Three commenters SLSA (161), RSR Corporation (162), and East Penn Manufacturing Co., Inc. (174) stated that insufficient capacity exists to treat lead slag and matte wastes produced by secondary smelters to the proposed BDAT level and explicitly requested that EPA grant the lead recycling industry a national capacity variance for the industry's D008 lead wastes.

SLSA (161) stated that, even if the standard is technologically feasible, insufficient capacity exists to stabilize slag and matte. East Penn (174) argued that their current information indicated that the capacity to stabilize slag and matte is very limited. SLSA and East Penn submitted correspondence from Mill Services, Envirosafe, and Horsehead Resource indicating that these facilities lack the technology and capacity to stabilize D008 slag and matte generated by secondary smelters. SLSA (161) submitted letters from the following generators and facilities: Schuylkill Metals Corp (with data from Peoria Disposal Co. and Rollins Environmental Services), Resource Consultants, Inc., and Envirosafe Management Services, Inc., also submitted by East Penn (174), which stated that slag and matte must be crushed to approximately 3/8" in order to be stabilized. Only Peoria Disposal and Rollins Environmental indicated that they were constructing the facilities to crush this waste.

SLSA (161) submitted evidence that its members do not have the capacity for thermal recovery treatment of slag, nor do they believe that conforming to the BDAT is technologically or economically feasible. Exide (117) asserted that thermal recovery of slag was infeasible. Since recovery capacity would not exist by May 8, 1990, Exide believed that the proposed regulations

HWTC (L0247) asserted that slag from secondary smelting processes should not be granted a capacity variance because secondary lead companies and associations provided no data to justify a capacity variance. The commenter asserted that slag is amenable to stabilization and should be restricted from land disposal prior to treatment. HWTC ((L0034) and (L0247)) disagreed with SLSA's (161) request for a national capacity variance for D008 nonwastewaters and stated that SLSA submitted no evidence to support its claim that insufficient treatment capacity exists for D008 slag. HWTC stated that SLSA's assertion that it would have to submit a slag treatability testing sample to Chemical Waste Management, Rollins and Peoria Disposal - a normal part of the waste analysis plan - does not justify SLSA's request for a capacity variance.

Response:

EPA has determined that the capacity to stabilize slag and matte is very limited. EPA is promulgating standards specifically for D008 slag and matte based on stabilization. These standards are interim, however, while EPA studies further the question of the best way to treat inorganic debris. See the preamble for a more detailed discussion. Because insufficient commercial capacity exists to stabilize these wastes, EPA is granting D008 slag and matte a two-year national capacity variance. Further inquiry into available grinding capacity yielded the following results:

- Sanders Lead plans to have on-site, noncommercial capacity to crush and stabilize all slag generated at their site in 1990.
- Exide Corporation (General Battery) stated that it has no crushing or grinding capacity available on-site. Exide asserted that grinding produces dust problems and stated that it does not have room for baghouses.
- East Penn Manufacturing stated that to crush slag to the less than half-inch diameter, a jaw crusher would have to replace the current roll clone crusher. The

permit modification time would take about 18 months, and construction would take about four to six months.

- Schuylkill Metals asserted there is no grinding capacity in industry or at landfills. Schuylkill currently breaks its solidified "buttons" of slag with sledge hammers prior to disposal.
- GSX asserted there is no grinding capacity, but that a pug mill used in the stabilization process reduces particle size and totally encapsulates wastes. GSX indicated that it had probably stabilized lead slag and matte.
- USPCI stated that it has no grinding capacity at present, but its class 1, 2, and 3 mod system would allow modification without a major permitting modification process. USPCI asserted that pug mills have not worked well for grinding since it requires a rock crusher/grinder (such as a jaw crusher). USPCI has explored grinding with a smelter who was not interested in arranging for grinding additions.
- Peoria Disposal stated there was no grinding capacity available.
- Rollins Environmental Services (Deer Park, TX) stated that it does not have capacity to grind waste prior to stabilization. Rollins indicated that it is in the process of developing this capacity.

Comments:

The comments relevant to insufficient capacity to treat slag and matte are presented in the following order:

- Exide (117: p. 3);
- Secondary Lead Smelting Association (SLSA; 161: pp. 7-11, Appendix B);
- RSR Corporation (162: p. 30-31);
- East Penn Manufacturing Co., Inc. (174: pp. 4-6,17,23-24);
- Hazardous Waste Treatment Council (HWTC; L0034 pp. 12-14);
- Hazardous Waste Treatment Council (HWTC) (L0247: p. 1).

Docket Number: LD12-00117 7-7 Lead and Zinc Wastes

Commenter: Exide Corporation

Comment:

3. Feasibility of Requiring Secondary Lead Smelting (or Thermal Recovery) for All D008 Wastes in the High Lead Subcategory.

The recycling of lead containing materials in industrial furnaces at secondary lead smelters produces a waste (known as blast furnace slag) which is a dense rock-like material consisting primarily of calcium oxide, iron oxides, and/or silica oxides. In addition, the blast furnace slag may contain lead levels in excess of 2.5% and may, at certain facilities, exhibit the characteristics of a hazardous waste based upon EP toxicity for lead.

There are no known feasible methods for the recycling (secondary lead smelting or thermal recovery) of secondary lead blast furnace slag. Recycling, based upon the proposed regulations, would be required by EPA since the total lead content of this waste may exceed 2.5% total lead. Since the recycling of this waste has not been demonstrated to be feasible and there will be no capacity to recycle these materials by May 9, 1990, the proposed regulations would force the closure of secondary lead smelters (an undesirable effect of the proposed regulations since EPA is already mandating the recycling of lead-containing wastes at secondary lead smelters).

Exide Corporation is also concerned that there may be other D008 wastes in the high lead subcategory which are generated by other industries which will be required (by EPA's land disposal prohibitions) to be recycled at secondary lead smelters but may be, in fact, prohibited from being recycled at secondary lead smelters because they are not considered to be "indigenous" wastes to secondary lead smelting operations. Exide Corporation has already provided comments to EPA on this issue, as part of EPA's proposed rulemaking on the burning of hazardous wastes in industrial furnaces.

3. (Continued)

Given these situations and the fact that national capacity will not be available by May 8, 1990 for the recycling of all lead-containing wastes in the high lead subcategory, Exide Corporation requests that a nationwide capacity variance be granted by EPA for wastes in the high lead subcategory.

Docket Number: LD12-00117

Commenter: Exide Corporation

Comment:

3. Feasibility of Requiring Secondary Lead Smelting (or Thermal Recovery) for All D008 Wastes in the High Lead Subcategory.

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3. (Continued)

Given these situations and the fact that national capacity will not be available by May 8, 1990 for the recycling of all lead-containing wastes in the high lead subcategory, Exide Corporation requests that a nationwide capacity variance be granted by EPA for wastes in the high lead subcategory.

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: ([redacted])

2. Low Lead v. High Lead D008 Wastes

In its proposed land disposal restrictions for D008 wastes, EPA proposed two separate BDATs based on the percentage of total lead in the waste. Nonwastewater forms of D008 wastes that contain less than 2.5% total lead must meet a proposed treatment standard of 0.51 mg/l based on stabilization. For wastes that contain 2.5% or greater total lead, EPA has proposed a BDAT treatment standard of high thermal recovery.

The SLSA believes that the distinction between low lead and high lead BDATs is unnecessary and counterproductive. Generators of D008 wastes should be free to avail themselves of the most appropriate BDAT for any lead-bearing waste, whether it be stabilization, high thermal recovery, or any other available technology. Market forces should dictate which of these environmentally sound BDATs are to be used for any given waste. EPA's proposal based on low lead and high lead subcategories places generators of D008 waste in an impossible situation that could lead to the improper disposal and handling of these wastes.

The promulgation of different BDATs for the low lead and high lead subcategories would impose an unreasonable burden on generators of D008 waste. First, generators would be required to test and to analyze each unit of waste as it was generated in order to determine which BDAT was applicable. Second, EPA has failed to identify any appropriate or acceptable testing procedures to determine the percentage of total lead in a waste. Without such guidance, it is virtually impossible to confirm what is the applicable BDAT. Finally, as discussed above, if the regulatory options for handling D008 waste are too inflexible, generators may resort to improper disposal practices, thereby defeating the objectives of the land disposal restrictions. The SLSA proposes that EPA eliminate the distinction between low lead and high lead D008 wastes, give generators the choice among available treatment

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

technologies, and set the BDAT treatment standard at the characteristic level of 5.0 mg/l.

3. Stabilization as BDAT

Relying on treatment data for other waste codes from other industries, EPA has proposed a treatment standard of 0.51 mg/l of lead for nonwastewater forms of D008 that contain less than 2.5% of total lead. Alternatively, EPA has proposed setting the treatment standard for nonwastewater forms of D008 at the characteristic level of 5.0 mg/l of lead. The SLSA supports EPA's proposal to set the treatment standard for D008 wastes at the characteristic level.

The characteristic level is the more appropriate treatment standard because this level is the one used to determine whether a waste is hazardous. Unlike a listed hazardous waste, treating a characteristically hazardous waste to a level below the characteristic level would render that waste nonhazardous for regulatory purposes. Accordingly, EPA would be exceeding its authority under RCRA to regulate hazardous waste by setting a treatment standard for D008 waste below the characteristic level of 5.0 mg/l.

Furthermore, the proposed treatment standard of 0.51 mg/l is not appropriate for D008 waste. This treatment standard was developed by relying on treatment data for other waste codes from other industries. While these data may provide sufficient justification for the applicable treatment standards for these other waste codes and industries, they are not appropriate for establishing a BDAT for D008 wastes generated by the lead recycling industry. A discussion of why the treatment data for these other waste codes is inappropriate for D008 wastes is provided below.

a. Data Base for Stabilization as BDAT

A review of the BDAT background document for F006 wastes clearly indicates that the F006 data base is flawed and that F006 wastes are significantly

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

b. Existing Treatment Data for Lead Recycling Industry

On December 22, 1989, the SLSA submitted data to EPA regarding the treatment of blast slag. This data confirmed that, based on stabilization, the more appropriate treatment standard for D008 waste is the characteristic level. This data set includes over 100 samples of "treated" blast slag. Specifically, the results of the statistical analysis of these data indicate a treatment range from 2.47 mg/l of lead to 4.64 mg/l of lead. These data clearly indicate that the 0.51 mg/l BDAT transferred from the F006 and K046 waste codes is inappropriate for D008 wastes generated by the lead recycling industry.

In the preamble to the November 22, 1989 Federal Register notice for the proposed land disposal restrictions, EPA acknowledged that it did not have any treatment data for the lead recycling industry. 54 Fed. Reg. at 48437 and 48439. Now that this data is available, the treatment standard for D008 waste should be based on the lead recycling industry data rather than data from other waste codes in other industries. Accordingly, the BDAT should be set at the characteristic level of 5.0 mg/l.

c. National Capacity for Stabilization

Although the existing treatment data for the lead recycling industry suggests wastes can be treated to the characteristic level, it does not appear that

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

adequate treatment capacity exists. Furthermore, even though several facilitie expect to have some additional capacity to treat lead-bearing wastes to th characteristic level, sufficient national capacity will not be available by May 8, 1990 Correspondence from representatives of hazardous waste treatment facilities tha address the feasibility of the proposed BDATs for D008 wastes are attached to thes comments in Appendix B. A discussion of these correspondence and the availabl capacity to treat D008 wastes from the lead recycling industry is provided below.

Two treatment facilities indicated that even if it were technically feasibl to stabilize D008 wastes to the proposed BDAT levels, sufficient capacity does no exist (Mill Service and Horsehead Industries). One facility indicated that it woul only accept furnace residues from the lead recycling industry if those residues did no exhibit the EP toxicity characteristic for lead (Envirosafe). This facility als indicated that even if it were feasible to treat the lead recycling industry's waste t the proposed level, neither of its facilities, located in Ohio and Idaho, would have suc treatment capacity by May 8, 1990. Those facilities that did indicate tha stabilization was feasible and that sufficient capacity was available relied only o treatment data for F006 waste (Chem Waste, Peoria Disposal, and Rollins). In fact these facilities indicated that they could not verify the feasibility of attaining th proposed treatment standards until samples of slag were tested at their facilities.

As discussed above, the treatment data for F006 cannot be appropriatel transferred to D008 wastes from the lead recycling industry. Furthermore, dat submitted by the SLSA indicate that blast furnace slag cannot be treated to th proposed BDAT levels. Accordingly, these facilities' claims regarding the feasibilit of treating blast furnace slag are unsubstantiated and directly contradictory to th existing treatment data for blast furnace slag.

Even if the facilities' claims can be substantiated, the prohibitive costs o treating and disposing of the industry's waste (i.e., $215 to $260/ton) dramatica'

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association. Inc. (SLSA)

Comment: (continued)

affect the continuing viability of the industry, particularly since the industry's direct competitors, the primary lead producers, will not have to incur such costs. While it may be possible for lead recycling facilities to reduce the treatment and disposal costs by designing and installing treatment equipment on site, existing blast slag treatment data indicate that the proposed BDAT of 0.51 mg/l is not attainable. The alternate BDAT level of 5.0 mg/l would, however, be attainable, but sufficient capacity for such treatment is not currently available. Accordingly, the SLSA requests that a nationwide capacity variance be granted for nonwastewater forms of D008 wastes, until sufficient capacity is available to treat wastes from the lead recycling industry to the characteristic level of 5.0 mg/l.

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

4. High Thermal Recovery BDAT

For nonwastewater forms of D008 waste that contain 2.5% or more of total lead, EPA has proposed a BDAT treatment standard of "high thermal recovery." While the SLSA generally supports efforts to encourage the recovery of lead from lead-bearing materials, EPA's proposed treatment standard fails to take into account the technical and economic feasibility of recovering lead from materials with relatively low percentages of lead. In fact, EPA has made a leap of faith in setting the threshold percentage at 2.5, because the K061 waste treatment data upon which it relied was limited in scope and was based on the recovery of lead from materials with greater than 5% total lead.

a. Data Base for High Thermal Recovery BDAT

The transfer of the electric arc furnace dust (K061) thermal recovery BDAT to establish a BDAT for D008 waste is inappropriate. Specifically, the physical and chemical characteristics of blast slag and other furnace residues generated by the lead recycling industry do not resemble K061 wastes. EPA stated in the preamble to the proposed rulemaking that "the Agency has data that indicate that wastes containing concentrations of lead as low as 5% can be recovered." 54 Fed.

Docket Numb-: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

Reg. at 48438. No correlation, however, exists between this K061 data and the slag or other furnace residues from the lead recycling industry. Furthermore, no existing operations or known technologies are capable of consistently removing the lead content of slag.

The BDAT Background Document for K061 wastes indicates that prior to thermal recovery, K061 typically contains 12 to 32% zinc. These levels are radically higher than secondary lead slag which typically contains less than 0.5% zinc. The large quantity of zinc in K061 wastes can significantly influence the thermal recovery process. Recognizing this fact, the Agency chose a minimum zinc concentration of 15% for demonstration that K061 can be thermally recovered. (See K061 Background Document p. 03 - 3).

K061 is primarily comprised of metal oxides, while slag principally contains large quantities of sulfur and silicate compounds. This difference can also greatly alter the thermal recovery process and results because lead can be extracted more readily from matrices of metal oxides than from matrices of sulfur and silicate compounds. EPA states that for K061 wastes, the calcium to silica ("Ca to Si") ratio must be maintained for the most effective treatment. The Ca to Si ratios for K061 wastes are reported to range from 3.33 to 9.84. Slag and other furnace residues from the lead recycling industry normally have Ca to Si ratios well below 1.0.

Thermal operational experiences in the lead recycling industry strongly indicate that their waste products cannot be consistently processed to the 2.5% lead concentration or to consistently pass the TCLP or EP toxicity tests. Therefore, the proposed BDAT of 0.51 mg/l for D008 wastes cannot be consistently attained using thermal treatment.

b. National Capacity for High Thermal Recovery

In addition to the absence of data to suggest that high thermal recovery is an appropriate BDAT for D008 waste with 2.5% or greater total lead, sufficient high

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

thermal recovery capacity is not currently available nor will sufficient capacity be available by May 8, 1990. The high-volume, low toxicity, lead-bearing waste generated by lead recycling facilities (i.e., blast slag) may contain as much as 10% of total lead and would, therefore, generally be considered a high lead subcategory waste under the proposed BDAT. It would not be technologically and economically feasible for the typical lead recycling facility to treat the significant volumes of such wastes that are generated to achieve the proposed BDAT. Accordingly, the lead recycling industry must rely on hazardous waste treatment facilities for high thermal recovery of these wastes. As demonstrated in the attached correspondence (Appendix B), however, representatives from these treatment facilities have indicated to SLSA members that they do not have capacity to treat these wastes nor do they believe that it is technologically or economically feasible to treat these wastes consistent with the proposed BDAT.

Without sufficient national capacity to treat their high lead subcategory wastes, lead recycling facilities would be unable to comply with the proposed BDAT. Accordingly, the SLSA requests that EPA grant the lead recycling industry a national capacity variance from the high thermal recovery BDAT.

JAN 0 9 1990

MILL SERVICE, Inc.

INDUSTRIAL WASTE DISPOSAL
Since 1957

1815 WASHINGTON ROAD • PITTSBURGH, PA 15241-1498 • (412) [illegible]
FAX (412) [illegible]

December 11, 1989

Mr. Daniel G. Deilicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Main Office
Lyon Station, Pennsylvania 19536

Dear Mr. Deilicker:

Please be advised that Mill Service, Inc. does not currently have the technology or capacity, nor do we expect to have the technology or capacity by May 8, 1990, to handle either the slag or matte wastes generated by East Penn Manufacturing Co., Inc. in accordance with the proposed land disposal restrictions for D008 wastes. Mill Service, Inc. has no intention at this time to install thermal recovery units for wastes in the High Lead Subcategory. Mill Service, Inc. also does not expect to be able to treat slag-type materials to meet the proposed TCLP concentration for Low Lead Subcatagory wastes.

If you have any further questions, please contact me.

Sincerely,

Carl F. Bender

Carl F. Bender, P.E.
Vice President - Engineering

CFB/mlb

LAKE
ENGINEERING, INC.

Lead and Zinc Wastes

December 22, 1989

VIA TELEFAX

Mr. Alexander Sierck
Beveridge & Diamond, P.C.

RE: Thermal Treatment Capacity & Technology

Dear Sandy,

We have contacted Horsehead Industries, a very knowledgeable firm with regard to the kiln treatment of low grade materials and with regard to industry capacities. We inquired about their potential capacity to treat secondary lead slag and matte in a way that would remove the heavy metals to the extent that the lead slag and matte would meet the EPA toxicity characteristic test (TCLP).

Horsehead currently operates kilns at their Palmerton, PA, facility at full capacity, predominantly on EAF dust for zinc recovery. Thus, they would have no capacity for slag or matte. They also stated that they knew of no similar capacity available, but that it might be technically possible to treat the slag in that manner. However, they do not know of it having been done. Utilizing Horsehead's kilns would require R & D and construction of capacity.

Horsehead also operates a pilot-scale Flame Reactor in Monaca, PA, which would be their preferred technology for the application of treating the slag and matte, but no commercial facility is operating.

6000 LAKE FORREST DR. SUITE 350
ATLANTA, GEORGIA 30328
(404) 257-9834 FAX (404) 847-9486

Mr. Alexander Sierck
December 22, 1989
Page Two

In summary, even though thermal treatment of slag and matte might be technically possible, there is no existing capacity in the U.S. to do it. Also, since this process has not been applied on a commercial basis, considerable research and development will be required and this will require extensive time.

Regards,

LAKE ENGINEERING, INC.

E. Kent Hudson

E. Kent Hudson
Vice President

EKH:rjb

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21

Lead and Zinc Wastes

JAN 08 1990

ENVIROSAFE MANAGEMENT SERVICES, INC.

December 22, 1989

Mr. Danial G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Subject: Final Third Land Disposal Restrictions

Dear Mr. Dallicker,

In response to your letter dated December 15, 1989, Envirosafe Services, Inc., (ESI) is pleased to submit the following information. In the interest of brevity, the questions are not repeated. Please refer to a copy of your letter, which is attached for your convenience.

1. ESI will accept slag and matte waste with levels below the EP toxic level of 5.0 mg/l. Because it is ESI's interpretation that a waste of this type would not be hazardous, no special technology is required. The waste would be disposed of in our RCRA/CERCLA approved landfill.

2. ESI will have the capacity to accept 57 tons/week of the waste at our facility in Oregon, Ohio. We could begin taking this waste immediately and can assure capacity for a least two years due to construction of a new cell with at least 475,000 cubic yards of capacity. This cell, expected to come on line in February, 1990, is in addition to our operating cell which has expected life into mid 1990. Cost to East Penn for disposal of this waste would be $160/ton or cubic yard (taxes included, transportation not included).

3. ESI will not have the technology to treat waste above 5.0 mg/l EP toxic level by thermal recovery.

4. Because ESI will not have the technology to treat this waste, no capacity will exist.

5. ESI currently operates a state-of-the-art stabilization facility at it's Grand View, Idaho facility and is successfully treating "first and second" third wastes. However, without performing an actual treatability study on your waste, it is virtually impossible to determine with any accuracy, whether or not this waste can be stabilized to the required level of 0.51 mg/l. After receiving the analytical data, it appears that this waste may need to be crushed or milled a into a powder-like form prior to treatment. While this crushing technology is commercially available, as of this date ESI has no plans to have such equipment in place by May 8, 1990. If

Mr. Daniel G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Page 2

Subject: Final Third Land Disposal Restrictions

the waste can be provided to ESI in the crushed form, treatment may be possible, but without actual treatability studies, no firm conclusion can be reached.

6. If the technology is available (i.e. the waste can be
stabilized as dis ssed in No. 5 above), the capacity to do so
will exist. The ho facility is capable of treating
approximately 1 0 tons/day of waste, depending on waste
types. The pro stream of 95 tons/week is well within our
current capacit dditionally, the existing stabilization
facility was d d with expansion capability to 240-260
tons/day. The , if the treatability study is successful,
then both tech and capacity will exist at least until the
year 2000. The o facility is currently operating two
RC RCRA appr d cells with approved expansion plans for
two additional cells.

If the waste can be stabilized, it could be handled immediately at our Idaho facility. The approximate cost would be $180/ton for treatment and disposal (provided the waste is received in it's crushed/powder form). Transportation by rail car from your rail siding, assuming one exists, to the Idaho facility is expected to be approximately $100/ton (loading not included). Total cost for transportation, treatment and disposal is $280/ton.

While ESI has attempted answer these questions to the best of our
ability, please recogn r business is one of constant and rapid
change. Under no circ ces shall the contents of this letter be
construed as a binding ent between ESI and East Penn
Manufacturing. All inf ion provided herein is for informational
purposes only and is subj t to changes. All pricing can be considered
negotiable.

Thank you for the opportunity to respond to your request. We look forward to working with you in the future to meet your hazardous waste management needs.

JAN 05 1990

If you have any questions or require additional information, please contact me at (215) 670-5900 or (215) 962-0800.

Sincerely,

Jon H. Gerhart
Regional Sales Representative

cc: T. Kerchinski
R. Pastor
R. Ellen

JHG:tmm

Chemical Waste Management, Inc.

3001 Butterfield Road
Oak Brook, Illinois 60521
708/218-1500

December 28, 1989

Mr. Robert M. Wilson
Interstate Lead Company
P. O. Box 276
Leeds, Alabama 35094

Dear Mr. Wilson:

This letter is in response to your inquiry regarding Chemical Waste Management's (CWM) ability to meet the proposed lead standards of the May 8, 1990 Land Ban regulations.

CWM has the technology available to stabilize wastes containing less than, equal to and even greater than 2.5% lead to the treatment standard of 0.512 ppm based on the TCLP test.

We also have the capacity to treat via stabilization the lead wastes your company generates. CWM will be ready on May 8, 1990 to stabilize your material to the BDAT levels.

Current pricing for stabilization and subsequent landfillings varies by CWM site but the following prices can be used as a general guide:

Emelle, Alabama	-	$215/ton + taxes
Lake Charles, Louisiana	-	$220/ton + taxes
Model City, New York	-	$260/ton + taxes

Our position on thermal recovery of lead wastes with over 2.5% lead is that this is technically difficult and economically infeasible. We plan on commenting to the EPA that they should change this 2.5% level to something that industry can live with and that all levels below those that can be technically and economically recovered, should be allowed to be stabilized to the 0.51 ppm level.

We currently stabilize K061 waste (EAF Dust) to 0.24 ppm lead.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

Michael J. Skurauskis

Michael J. Skurauskis
Marketing Manager - Inorganics

MJS:db
cc: Mike Davis, CWM

7-26

Lead and Zinc Wastes

SCHUYLKILL METALS CORPORATION

HOME OFFICE
P.O. Box 74040
BATON ROUGE, LA 70874
504—775-3040

CANON HOLLOW BRANCH
P.O. Box 156
FOREST CITY, MO 64451
816—446-3321

December 14, 1989

Mr. Rob Steinwurtzel
Andrews and Kurth Attorneys
1701 Pennsylvania Avenue, N.W.
Suite 200
Washington, D.C. 20006

Dear Rob:

I have contacted Peoria Disposal Company, Peoria, Illinois and Rollins Environmental Company, Baton Rouge, Louisiana in reference to the information requested in your December 15, 1989 Landban Variance letter.

Both facilities believe they have the technology to manage the waste in accordance with the proposed BDAT Levels since both are now managing F006 wastes. However, both facilities require samples to verify their technology on our waste product. Neither facility has the capability to resize our waste. Rollins is attempting to install and permit a grinder and pug mill in the first quarter, 1990. Peoria is looking at installing grinding equipment in early next year. Rollins estimates the treatment and disposal cost at $260/ton. Peoria would not speculate on the cost. I have also contacted Chemical Waste Management in Lake Charles, Louisiana; but have not received a full response as yet. This information will be sent to you when received.

Yours truly,

SCHUYLKILL METALS CORPORATION

Glen E Hasse

Glen E. Hasse
Vice President

GEH/cb

RECEIVED
DEC 19 1989
NDREWS & KURTH

GNB Incorporated

Resource Recycling Division
S.E. Region

P.O. Box 2165
Joy Road
Columbus, GA 31902
Telephone (404) 689-1701

7-27

Lead and Zinc Wastes

RECEIVED
DEC 1 19[illegible]
ANDREWS & [illegible]

8 December 1989

Mr. Jack Waggener
Resource Consultants Inc.
Environmental Engineers and Scientists
The Westwood Building
110 Westwood Place
Brentwood, Tennessee 37027

Dear Jack:

Pursuant to our meeting in Atlanta, today I talked with Mr. Bob Key, Technical Manager for Chemical Waste Management Inc, Emelle, Alabama, regarding treating and disposal of Secondary Lead Blast Furnace Slag.

Mr. Key stated they would treat metal waste F006. I explained our waste product to him and his comment was, they would be glad to do a treatability study on the waste. He claims they will treat to the established treatability limits. He indicated they do not have process equipment now, but plan to install in the near future. Claims the disposal and treatment cost will be in the $215.00 per ton range.

Very truly yours,

F. L. Barnett
Director Environmental Affairs

FLB/bb

cc: Ed Puckett
[redacted]
Earl Cornette

ANDREWS & KURTH
ATTORNEYS
7-28
1701 PENNSYLVANIA AVENUE, N.W.
SUITE 200
WASHINGTON, D.C. 20006

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TELEX: 79-1208

Lead and Zinc Wastes

December 22, 1989

DEC 22 1989

VIA CERTIFIED MAIL

RCRA Docket (OS-305)
Room 2427
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Re: Land Disposal Restrictions - D008 Wastes
Docket No. F-89-LD12-FFFFF

Dear Sir or Madam:

On behalf of the Secondary Lead Smelters Association, Inc. ("SLSA"), we hereby submit data on the treatment of lead-bearing waste pursuant to the Agency's request for such data in its November 22, 1989 Federal Register notice of proposed land disposal restrictions. 54 Fed. Reg. 48372 (1989). We are submitting the original and two copies of the data in a timely fashion, and the data should, therefore, be incorporated as part of the administrative record.

The SLSA is a national, non-profit trade association that represents the lead recycling industry in technical, legislative, and regulatory environmental matters. Through recycling efforts, the SLSA members represent approximately 80 percent of the domestic lead recycling capacity. In producing lead, the SLSA members rely primarily on spent lead-acid batteries and other lead-bearing materials for their raw materials.

The enclosed data was collected on behalf of the SLSA by Mr. Jack Waggener of Resource Consultants, Inc. in Brentwood, Tennessee (telephone 615-373-5040). A brief description of how this data was generated is also included in the enclosed materials.

On behalf of the Secondary Lead Smelters Association, Inc., we appreciate the opportunity to provide this data on the treatment of lead-bearing wastes. If you

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have any questions regarding this data or would like additional information, please contact Mr. Waggener or us.

Sincerely,

Robert N. Steinwurtzel
Jeffery S. Hannapel
Counsel to the Secondary
Lead Smelters Association, Inc.

Enclosure

cc: Mr. Earl Cornette
Mr. N. Kenneth Campbell
Mr. T. W. Freudiger
Mr. Jack Waggener

Chemical Stabilization/Fixation Data
# of Slag/Furnace Residues (D008 Wastes)
From Secondary Lead Plants.

December 22, 1989

The Secondary Lead Smelters Assoc. (SLSA) engaged Resource Consultants, Inc. (RCI) to collect, review, and analyze fixation data from the secondary lead industry. This activity was performed in an effort to gather data for submission to the US EPA so that a proper best demonstrated available technology (BDAT) could be established for D008 characteristic wastes.

The RCI survey of the industry revealed that two plants (identified as Plant A and Plant B) had performed relatively extensive fixation studies on the furnace residues in which the Toxicity Characteristic Leaching Procedure (TCLP) had been used in the fixation assessments. It is important to note that the attached fixation data for Plants A and B represent laboratory or pilot scale operations. Typically full scale operations would not be expected to achieve as low a levels as represented by this data. As with the fixation of most wastes, the use of portland cement proved to be the best methodology that produced consistently low TCLP lead results.

Almost all secondary lead smelting slag ranges in lead assay from 1 to 5 percent and some plant furnace residues can range to more than 10% lead. All the data represented in this submittal is for the fixation of wastes in these ranges.

RESOURCE
CONSULTANTS

In performing these tests the furnance residues were crushed to less than 3/8" particle size prior to mixing with cement and other chemical additions. It is important to note that the furnace slags are often as hard as granite rock, and therefore most difficult to crush to less than 3/8".

Each of the laboratories performing the TCLP and other tests participate in the US EPA QA/QC programs for water analysis. Proper QA/QC has been performed and duplicate analysis is represented by a large portion of the data.

All of the varying ratios of portland cement to the waste resulted in similar TCLP lead concentrations. This strongly indicates that ratios as low as 1 part cement to 15 parts waste gives similar results to higher ratios such as 4 to 10.

The data sets for Plant A and B were individually analyzed using the lognormal statistical analysis which EPA used in developing the proposed BDAT treatability concentrations for land disposal restrictions. The result of the statistical analysis are shown for each data set. Plant A had a C99, which is equivalent to the BDAT level analysis, of 2.47 mg/l. Plant B which represents a much larger data base of 88 data points had a calculated C99 maximum value of 4.64 mg/l of lead in a TCLP extract. This data vividly indicates that the 0.51 mg/l transfer of technology standard from F006 waste is inappropriate for secondary lead furnace residues. A more appropriate level is one that approaches the current 5.0 mg/l lead characteristic level.

PLANT A DATA

Ratio of Portland Cement to Slag (Furnace Residues)	TCLP mg/l Pb in Extract
1:5	0.5
1:5	0.3
1:5	0.3
1:10	0.3
1:10	0.1
1:10	0.1
1:15	1.0
1:15	0.2
1:15	0.3
1:2	0.5
1:2	0.8
1:5	0.8
1:6	0.3
1:6	2.4
1:6	0.2
1:8	0.2
1:8	0.6
1:8	0.2
1:10	0.3
1:10	0.3
1:10	1.4

V_F = 4.22
Pb, Maximum, C_{99} = 2.4713 mg/l
Pb Mean = 0.5286 mg/l

PLANT B DATA

Ratio of Portland Cement to Slag (Furnace Residues)	Other Chemical Additions	TCLP mg/l Pb in Extract
1:5	2 - 5% Polymers & Silicates	1.65
		1.25
		2.40
		1.23
		2.69
"	"	2.24
		0.48
		1.35
		2.45
		2.75
"	"	0.85
		0.47
		0.78
		2.03
		0.77
"	"	0.66
		2.06
		2.12
		1.59
		2.66
"	"	0.77
		1.86
		2.95
		1.96
		2.06
"	"	0.32
		2.45
		0.40
		0.46
		0.40
"	"	0.53
		0.27
		1.29
		0.34
		0.28
"	"	0.28
		0.25
		0.29
		0.25
		0.37

Ratio of Portland Cement to Slag (Furnace Residues)	Other Chemical Additions	TCLP mg/l Pb in Extract
1:5	2 - 5% Polymers & Silicates	0.33
		0.28
		0.32
		0.31
		0.35
"	"	0.22
		0.25
		0.28
		0.32
		0.20
"	"	0.33
		0.30
		0.34
		0.37
		0.35
"	"	0.35
		0.35
		0.35
		0.59
		0.32
"	"	0.35
		0.34
		0.80
		0.71
		0.35
"	"	0.46
		0.38
		4.89
		0.43
		0.35
"	"	0.30
		0.33
		0.24
		0.27
		0.34
"	"	0.28
		0.71
		1.10
		0.32
		0.30
"	"	1.51
		0.30
		8.50

Ratio of Portland Cement to Slag (Furnace Residues)	Other Chemical Additions	TCLP mg/l Pb in Extract
4:10	10% Silicates	0.45
		1.22
		0.77
4:10	5% Silicates	0.84
		1.19

V_F = 4.82

Pb, Maximum, C_{99} = 4.6436 mg/l

Pb Mean = 0.9636 mg/l

Docket Number: LD12-00162 (continued)

Commenter: RSR Corporation

Comment: ~~(continued)~~

F. The Distinction Between "Low Lead" and "High Lead" D008 Nonwastewater Subcategories is Technically Unsound

EPA has proposed separate treatment standards for wastes containing "low lead" and "high lead" concentration levels. Low lead wastes contain lead concentrations up to 2.5 percent, and high lead wastes contain lead in excess of 2.5 percent. 54 Fed. Reg. 48438 (col. 2). For low lead levels, EPA has proposed stabilization which results in leachable lead of 0.51 mg/l. Alternatively, EPA has proposed setting BDAT at 5.0 mg/l of lead, the characteristic level. For high lead level wastes, EPA has proposed "thermal recovery." Id. at 48439 (col. 1).

EPA's distinction between these two subcategories is arbitrary and unsubstantiated. EPA should abandon the distinction and establish a treatment standard of 5.0 mg/l as the treatment standard for all D008 nonwastewaters based on the characteristic level for lead. In addition, EPA should issue a national capacity variance for nonwastewater forms of D008 wastes until sufficient capacity is available to treat wastes from the lead recycling industry to proposed BDAT levels.

EPA states that the five percent lower limit of lead concentration data that it believes demonstrates the technical feasibility of recovery "correlates" well with the 2.5 percent

Docket Number: LD12-00162 (continued) 7-87

Commenter: RSR Corporation

Comment: [redacted]

maximum concentration in the wastes that were demonstrated to be stabilized effectively. In RSR's view, a concentration difference of 25,000 mg/kg (2.5 percent), which is a 100 percent difference with respect to the lower lead concentration, is not a good correlation in any scientific sense of which RSR is aware.

Further, EPA's assumption that waste containing between 2.5 and 5 percent lead are recoverable by "demonstrated" and "available" technologies is not supported by EPA's data, which do not demonstrate practical recovery of lead from waste containing less than 5 percent lead.

Moreover, EPA has undertaken no analysis to determine whether adequate capacity exists to accommodate the influx of materials that will be directed to secondary lead facilities as a result of this rulemaking. Adequate capacity may not exist for these purposes. Indeed, the Secondary Lead Smelters Association, Inc. ("SLSA") has submitted data to EPA that suggest adequate treatment capacity does not exist. See Comments of SLSA on Proposed Land Disposal Restrictions on Final Third Restricted Wastes (January 8, 1990). RSR supports the comments of SLSA in this regard, and urges EPA to issue a national capacity variance for nonwastewater forms of D008 wastes until sufficient capacity is available to treat wastes from the lead recycling industry to propose BDAT levels.

Finally, as more fully set out in RSR's comments in response to the proposed supplement to the May 1987 proposal

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: ~~(continued)~~

East Penn's secondary smelting process currently generates slag and matte which still contains equal or greater than 2.5% lead, yet there is not presently available a feasible means of further thermal recovery or stabilization. Reuse of the slag and matte which exhibits equal or greater than 2.5% lead in the thermal recovery process has not consistently produced residues with leach levels below the characteristic level of 5.0 mg/l. Additionally, the operational costs of reusing these materials through thermal recovery exceeds the value of the lead recovered. Further, information available to East Penn indicates the capacity to treat the slag and matte by stabilization is very limited and that the slag and matte cannot be treated by stabilization without further processing to significantly reduce the particle size prior to stabilization. Therefore, East Penn submits that the agency's definition of the High Lead Subcategory and the Low Lead Subcategory based on the treatability by stabilization or thermal recovery is unsupportable as applied to the lead acid batteries and waste slag and matte produced by secondary smelting of spent lead acid batteries.

Secondary smelting of spent lead acid batteries for lead recovery is an environmentally beneficial operation which is consistent and responsive to the congressional findings and objectives set forth in the Resource Conservation and Recovery Act

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

("RCRA")[2]. East Penn recycles over 3 million spent lead acid batteries annually; every such battery recycled is one less battery that will be sent to a landfill or illegally disposed of in some other fashion. Based upon these valid policy reasons, EPA should, therefore, set treatment standards which will ensure that this desirable activity is continued until technology can be developed to produce residues from the secondary smelting operations with leach levels consistently below the characteristic level of 5.0 mg/l or until capacity can be developed to treat the residues through stabilization.[3]

From a legal standpoint there is no reasonable basis to support EPA's decision to apply a treatment standard to the slag

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[2] See RCRA Section 1002(c), 42 U.S.C. § 6901(c) (reciting the congressional finding that "(1) millions of tons of recoverable material which could be used are needlessly buried each year; (2) methods are available to separate usable materials from solid waste; and (3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments"); RCRA Section 1003(a)(6), 42 U.S.C. § 6902(a)(6) (articulating the congressional objective of "minimizing . . . the land disposal of hazardous waste by encouraging . . . materials recovery"). See also H.R. Rep. No. 1491, 94th Cong., 2d Sess. 11 (1976) (RCRA "proposes a way to lessen the drain on our domestic resources and to decrease our dependence on foreign sources of raw material and energy, both of which can be reclaimed from waste").

[3] To do otherwise could result in a rule contrary to the policy of RCRA in setting recycling as a desirable goal. Unrealistic treatment standards for the waste produced in recycling could have the effect of "taxing" recycling and thereby make the use of virgin lead more attractive.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

and matte produced from the secondary smelting process which exhibits EP Toxicity for lead since the lead acid batteries have already undergone the chosen BDAT method of treatment. RCRA does not mandate that the residue from the lead acid batteries be rendered completely non-hazardous before it can be land disposed. Further, if a treatment standard is imposed to the slag and matte, EPA lacks authority under RCRA to set the standard below the characteristic leachate level of 5.0 mg/l. Finally, if a treatment standard of 5.0 mg/l is applied to the slag and matte, it will be an abuse of the agency's discretion if a national capacity variance is not granted.

Accordingly, the treatment standard for lead acid batteries should be thermal recovery as a method of treatment, however, the resulting residue should not be required to meet a treatment standard of less than 5.0 mg/l leachable lead prior to land disposal. In the alternative, East Penn submits that the treatment standard for lead acid batteries should be thermal recovery as a method of treatment, with the resulting residue being required to leach lead at a level of less than 5.0 mg/l. However, a national capacity variance should be granted for the resulting slag and matte residue which fails to leach lead at levels below the characteristic level until adequate treatment technology and capacity becomes available.

Commenter: East Penn Manufacturing Co., Inc.

Comment:

Presently, it appears that the operational cost to reuse the slag and matte through East Penn's thermal recovery process for further lead recovery exceeds the value of the lead recovered, thus rendering the process economically infeasible. (See discussion under Section IV below).

Information currently available to East Penn indicates that the capacity to treat the slag and matte by stabilization is very limited. See letters attached as Exhibits "D", "E" and "F". It also appears that any stabilization process currently available will require that the waste be comprised of relatively small particles, one-half inch in diameter or smaller. Both the slag and matte now generated by East Penn range in particle size from fines to 16" by 16" by 16" irregular shapes and would require size reduction prior to stabilization. This size reduction can be obtained either through grinding or granulation, but neither method will be available until sometime after May 8, 1990, the effective date of the land disposal restrictions.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

C. **If a Treatment Standard of 5.0 mg/l is Applied to the Slag and Matte Exhibiting EP Toxicity for Lead, a National Capacity Variance Must be Granted**

In the proposed rules, EPA acknowledges that the treatment standards presented for all lead wastes are based on a limited amount of treatment data. East Penn has provided information that shows that slag and matte containing 2.5% or greater lead content cannot be consistently treated by the available methods of thermal recovery to reduce the EP Toxicity level of the resulting residue to below 5.0 mg/l. Thermal recovery is therefore not an available method of treatment for these residues and the proposed BDAT for the High Lead Subcategory of D008 Wastes cannot be applied. East Penn has also demonstrated that there is insufficient capacity to treat the slag and matte containing below 2.5% lead or containing equal to or above 2.5% lead by stabilization. RCRA provides the Agency with the authority to grant national capacity variances from the statutory effective dates, not to exceed two years, if there is insufficient alternative protective treatment, recovery or disposal capacity for the wastes. 42 U.S.C. § 6924(h)(2). If the Agency fails to do so in this instance, it would clearly be an abuse of its discretion.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

7-44 Lead and Zinc Wastes

MILL SERVICE, Inc
INDUSTRIAL WASTE DISPOSAL
Since 1957

1515 WASHINGTON ROAD • PITTSBURGH, PA 15241-1498 • (412) 343-4900
FAX (412) 854-5307

December 21, 1989

Mr. Daniel G. Dellicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Main Office
Lyon Station, Pennsylvania 19536

Dear Mr. Dellicker:

Please be advised that Mill Service, Inc. does not currently have the technology or capacity, nor do we expect to have the technology or capacity by May 8, 1990, to handle either the slag or matte wastes generated by East Penn Manufacturing Co., Inc. in accordance with the proposed land disposal restrictions for D008 wastes. Mill Service, Inc. has no intention at this time to install thermal recovery units for wastes in the High Lead Subcategory. Mill Service, Inc. also does not expect to be able to treat slag-type materials to meet the proposed TCLP concentration for Low Lead Subcategory wastes.

If you have any further questions, please contact me.

Sincerely,

Carl F. Bender

Carl F. Bender, P.E.
Vice President - Engineering

CFB/mlb

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DEC [illegible]
E.P.A.

Exhibit "D"

ENVIROSAFE MANAGEMENT SERVICES, INC.

December 22, 1989

Mr. Danial G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Subject: Final Third Land Disposal Restrictions

Dear Mr. Dallicker,

In response to your letter dated December 15, 1989, Envirosafe Services, Inc., (ESI) is pleased to submit the following information. In the interest of brevity, the questions are not repeated. Please refer to a copy of your letter, which is attached for your convenience.

1. ESI will accept slag and matte waste with levels below the EP toxic level of 5.0 mg/l. Because it is ESI's interpretation that a waste of this type would not be hazardous, no special technology is required. The waste would be disposed of in our RCRA/CERCLA approved landfill.

2. ESI will have the capacity to accept 57 tons/week of the waste at our facility in Oregon, Ohio. We could begin taking this waste immediately and can assure capacity for a least two years due to construction of a new cell with at least 475,000 cubic yards of capacity. This cell, expected to come on line in February, 1990, is in addition to our operating cell which has expected life into mid 1990. Cost to East Penn for disposal of this waste would be $160/ton or cubic yard (taxes included, transportation not included).

3. ESI will not have the technology to treat waste above 5.0 mg/l EP toxic level by thermal recovery.

4. Because ESI will not have the technology to treat this waste, no capacity will exist.

5. ESI currently operates a state-of-the-art stabilization facility at it's Grand View, Idaho facility and is successfully treating "first and second" third wastes. However, without performing an actual treatability study on your waste, it is virtually impossible to determine with any accuracy, whether or not this waste can be stabilized to the required level of 0.51 mg/l. After receiving the analytical data, it appears that this waste may need to be crushed or milled a into a powder-like form prior to treatment. While this crushing technology is commercially available, as of this date ESI has no plans to have such equipment in place by May 8, 1990. If

P.O. Box 833, Valley Forge, Pennsylvania 19482-0833 • (215) 962-0800
Facsimile Machine (215) 962-0727

Exhibit "E"

Mr. Daniel G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Page 2

Subject: Final Third Land Disposal Restrictions

the waste can be provided to ESI in the crushed form, treatment may be possible, but without actual treatability studies, no firm conclusion can be reached.

6. If the technology is available (i.e. the waste can be stabilized as discussed in No. 5 above), the capacity to do so will exist. The Idaho facility is capable of treating approximately 120-180 tons/day of waste, depending on waste types. The proposed stream of 96 tons/week is well within our current capacity. Additionally, the existing stabilization facility was designed with expansion capability to 240-260 tons/day. Therefore, if the treatibility study is successful, then both technology and capacity will exist at least until the year 2000. The Idaho facility is currently operating two RCRA/CERCLA approved cells with approved expansion plans for two additional cells.

   If the waste can be stabilized, it could be handled immediately at our Idaho facility. The approximate cost would be $180/ton for treatment and disposal (provided the waste is received in it's crushed/powder form). Transportation by rail car from your rail siding, assuming one exists, to the Idaho facility is expected to be approximately $100/ton (loading not included). Total cost for transportation, treatment and disposal is $280/ton.

While ESI has attempted to answer these questions to the best of our ability, please recognize our business is one of constant and rapid change. Under no circumstances shall the contents of this letter be construed as a binding agreement between ESI and East Penn Manufacturing. All information provided herein is for informational purposes only and is subject to changes. All pricing can be considered negotiable.

Thank you for the opportunity to respond to your request. We look forward to working with you in the future to meet your hazardous waste management needs.

Mr. Daniel G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536 Page 3

Subject: Final Third Land Disposal Restrictions

If you have any questions or require additional information, please contact me at (215) 670-5990 or (215) 962-0800.

Sincerely,

Jon H. Gerhart
Regional Sales Representative

cc: T. Kerchinski
R. Pastor
R. Ellen

JHG:tma

Chemical Waste Management, Inc.
3001 Butterfield Road
Oak Brook, Illinois 60521
708/218-1500

7-48

Lead and Zinc Wastes

December 28, 1989

Mr. Dan Dellicker
East Penn Mfg.
Deka Road
Lyon Station, PA 19536

Dear Mr. Dellicker:

This letter is in response to your inquiry regarding Chemical Waste Management's (CWM) ability to meet the proposed lead standards of the May 8, 1990 Land Ban regulations.

CWM has the technology available to stabilize wastes containing less than, equal to and even greater than 2.5% lead to the treatment standard of 0.512 ppm based on the TCLP test.

We also have the capacity to treat via stabilization the lead wastes your company generates. CWM will be ready on May 8, 1990 to stabilize your material to the BDAT levels.

Current pricing for stabilization and subsequent landfilling varies by CWM site but the following prices can be used as a general guide:

Emelle, Alabama	-	$215/ton + taxes
Lake Charles, Louisiana	-	$220/ton + taxes
Model City, New York	-	$260/ton + taxes

Our position on thermal recovery of lead wastes with over 2.5% lead is that this is technically difficult and economically infeasible. We plan on commenting to the EPA that they should change this 2.5% level to something that industry can live with and that all levels below those that can be technically and economically recovered, should be allowed to be stabilized to the 0.51 ppm level.

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JAN 0 2 [illegible]
E.P.M.

Exhibit "F"

We currently stabilize K061 waste (EAF Dust) to 0.24 ppm lead.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

Michael J Skurauskis

Michael J. Skurauskis
Marketing Manager - Inorganics

MJS:db

Docket number: LD12-L0034

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

H. Comments On Lead Wastes (D008)

1. Comments Of Lead Smelters

The Secondary Lead Smelters Association submitted two comments on the proposed Third-third rule. The first comment was a data submission received by EPA on December 22, 1989 (LD12-00065) and the second comment is the interpretative and narrative comment received by EPA on January 8, 1990 (LD12-00161). SLSA makes several points on which HWTC offers the following comments:

a. High Lead vs Low Lead

HWTC supports SLSA's concerns about the suitability and practicality of the 2.5% cutoff for lead recovery. HWTC has submitted data demonstrating that lead in excess of 2.5% can be effectively stabilized. Chemical Waste Management (CWM) has also submitted data demonstrating that wastes containing up to 25% per cent lead can be stabilized. HWTC believes that EPA should not establish an upper cutoff for the stabilization of lead. We believe that the ability of stabilization to meet the BDAT should dictate which waste is to be recycled (i.e., do not set a cutoff and those waste which cannot be stabilized to meet the limit will be forced into recycling). Note also those comments regarding factors that affect the amenability of a waste to recycling (Section IV). At the very least, EPA should raise the limit to 25% as suggested by CWM. We also share the concern of SLSA over the analytical difficulties of determining the percentage lead content in a particular waste stream.

b. Stabilization as BDAT

We are encouraged to see the data submitted by SLSA demonstrating the effectiveness of stabilization for the treatment of D008 lead. However, SLSA inappropriately objects to the establishment of a BDAT limit lower than the characteristic level. Then, undeterred by that position, SLSA proceeds to offer data indicating that BDAT technologies can routinely and easily achieve a lower standard. While the comments are obviously antagonistic to EPA's wisdom in setting BDAT below the characteristic level, the most reasonable interpretation of the sum total of this comment is that the data presented by SLSA support EPA's action confirming the fact that setting BDAT at the characteristic level removes the "B" from BDAT.

The Secondary Lead Smelter Association presents arguments to justify why a tech transfer from F006 is inappropriate. Their arguments are focused only on the lead content of the waste, and they fail to consider the concentration of other metal constituents. Further, they cite the low-lead concentration of the untreated F006 waste, however F006 represents a hydroxide sludge from treatment of electroplating and metal finishing wastewaters. The untreated electroplating wastewaters can have percentage levels of lead present. Finally, a tech transfer from K061 waste might also be appropriate for secondary lead furnace slag. K061 waste contains percentage levels of lead. The factors pointed out by the secondary lead smelters that make furnace slag different from F006 sludge (i.e., physical appearance, particle size, lead content) support K061 as a more appropriate waste of similar properties. Yet the lead BDAT standard for K061 waste is half that (.24 PPM) set for F006. By choosing the F006 standard EPA appears to have been attempting to give the greatest latitude for the diverse physical forms of D008 waste anticipated.

c. National Capacity Variance

SLSA requests a national capacity variance of two years for the nonwastewater form of D008 because the firms who have indicated that they can provide the service require a sample for treatability testing. SLSA observes on page 8 of the January 8 comments (LD12-00161) that Chemical Waste Management, Rollins and Peoria Disposal are able to manage their waste although a sample must be submitted for treatability testing. The request for a national capacity variance is therefore not justified.

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

d. QA/QC Concerns

The data package submitted by SLSA is deficient with respect to a number of information packages required by EPA in evaluating BDAT. No QA/QC data is provided,and no concentration of metals in the untreated waste is given. No detail is given of the treatment methodology, other than ratios of portland cement binders. It should be noted that in both the F006 and K061 BDAT Background Document, other stabilization agents are used to assure greater pozzoulonic activity, and metals binding. Agents such as fly ash, lime, and sulfide would provide for a higher degree of stabilization and metals treatment than just adding portland cement. Lead is also amphoteric, and no pH data is provided by SLSA to indicate if they optimize the pH of their stabilization.

Even at that, 64 of the 109 data points (or 51% of the data) provided by SLSA indicate compliance with EPA's proposed BDAT standard of .51 PPM lead for D008 non-wastewater. The average for Plant A was only slightly over the proposed standard (.53 vs .51). The average for Plant B was 0.82 PPM excluding two outliers from the 83 data point set. Therefore, with some minor additional optimization, the proposed standard of .51 should be achievable on a routine basis. Even if the data is used to set BDAT, a treatment standard in the range of 2.2 to 3.8 PPM would result even after a variability factor is applied, still at a level well below the characteristic level. The Plant A data would yield a BDAT standard of 2.2, and the Plant B data (excluding the two outliers) would give a BDAT standard of 3.8. This data should not be used to set BDAT, however, because no QA/QC is provided, nor any details given concerning the treatment process to determine if it is well operated. EPA should maintain the BDAT standard at the proposed 0.51 level based on F006 non-wastewaters.

Docket number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

In general we find many of the capacity issues raised by commenters to be related to treatability issues, not capacity. For example, certain examples of problematic debris waste such as refractory waste are described as capacity issues when the promulgation of separate BDAT standards for all debris will solve the serious problem that exists currently with debris. This problem currently exists for debris derived from F006-F010 wastes for example. At the present time, EPA has provided for treatability variances for contaminated debris to establish BDAT in a case-by-case basis; a capacity extension is totally unwarranted. In addition, EPA has not evaluated recovery furnace technology and the severe limitation of these processes with respect to the physical and chemical form of the waste that can be managed. Many operators of smelting furnaces are telling EPA that many lead wastes are not amenable to recovery. This problem will not go away in two years. Therefore, EPA must allow stabilization for high lead waste. Finally, certain capacity complaints are the result of EPA's selection of obscure or bench scale technologies. For example, vitrification was selected as

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2. Comments of the National Paint and Coatings Association, Inc. (NPCA) (Docket #LD12-D0158)

The HWTC concurs with NPCA that high temperature metals recovery is not feasible at the currently defined lead threshold of 2.5%. EPA should raise this threshold to

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7.2 INSUFFICIENT STABILIZATION CAPACITY FOR D008 NONWASTEWATERS

Summary:

Five commenters (Schuylkill Metals Corporation (82), Lead Industries Association (LIA; 101), Exide Corporation (117), Hammond Lead (153), and Hazardous Waste Treatment Council (HWTC; L0247)) submitted comments on this issue. Three commenters (Lead Industries Association (LIA; 101), Exide Corporation (117), and Hammond Lead (153)), stated that adequate stabilization capacity for D008 low lead subcategory waste would not be available by May 8, 1990. The three commenters requested variances for their D008 nonwastewater wastes.

Schuylkill Metals Corporation (82) asserted that if the proposed rules were not changed many, if not all, generators of low lead wastes would require variances and these wastes would have to be stabilized rather than recycled.

Exide (117) emphasized that treatment facilities would not be equipped to provide stabilization services by May, 8 1990, or would not have received permits for stabilization, and that transporting these wastes to distant locations for treatment would increase health risks.

HWTC (L0247) asserted that at a threshold of 50 percent lead, enough chemical precipitation and stabilization capacity would exist by May 8, 1990 to treat D008 nonwastewaters that are beneath the threshold.

Response:

EPA has promulgated concentration standards based on stabilization or thermal recovery (secondary smelting) for lead nonwastewaters. The proposed distinction of high- and low-lead subcategories has been dropped. EPA has determined that the total capacity of these two technologies is adequate to treat D008 nonwastewaters that are not inorganic debris. EPA has determined that 479 million gallons of stabilization capacity and 37 million gallons of thermal recovery (secondary smelting) exist. Because EPA has determined that enough stabilization capacity exists to treat D008 nonwastewaters, EPA has decided to not grant a national capacity variance for these wastes.

Comments:

The comments relevant to insufficient stabilization capacity for D008 nonwastewaters are presented in the following order:

- Schuylkill Metals Corporation (82: pp. 2-4);
- Lead Industries Association (LIA; 101: p. 7);
- Exide Corporation (117: p. 5);
- Hammond Lead (153: p. 4); and
- Hazardous Waste Treatment Council (HWTC; L0247: pp. 8-9).

Docket Number: LD12-00082

Commenter: Schuylkill Metals Corporation

Comment:

In the smelting process a slag product is generated. The slag is inspected and a portion depending on its analysis is re-recycled. The slag is finally reduced to a State of "non-recycability" meaning that it is infeasible for Schuylkill Metals or any other company to reclaim any additional lead from the material. A percentage of our Missouri facility slag when analyzed using the

EP Toxicity Test (40 CFR 261 Appendix II) marginally exceeds the lead concentration standard of 5 ppm. Many slag samples have tested non-toxic for lead in this test. This slag is a high volume, low toxicity waste generated both by the primary and secondary lead industries. The primary slag, although highly similar to secondary slag, is exempt from RCRA rules under the Bevill Amendment. The primary slag may be generated from up to 50% secondary (scrap) materials and still maintain its Bevill Amendment exemption (fed. Reg. Vol. 54 No. 169/Friday, September 1, 1989.) The EPA, as discussed in this Federal Regulation utilized a Synthetic Precipitation Leaching Procedure (SPLP), Method 1312, to exclude a portion of the mining wastes from the Bevill Amendment. This test was developed by the EPA to simulate storm water falling on and leaching hazardous constituents from various mining wastes which have been deposited outside at the mining or primary smelting sites. The results of the SPLP Tests on primary lead slag are illustrated in the attached Exhibit 2. All three tests passed the SPLP Level of 5 ppm and therefore the slag was not excluded from the Bevill Amendment exemption. The Schuylkill Missouri facility disposes of its slag in an onsite, secure hazardous waste landfill. This landfill also accepts on-site generated hard rubber battery chips and water treatment (lime) sludge which tests non-toxic in the EP Toxicity Test. These wastes are not exposed to any acid. Storm water falling directly into the landfill is the primary source of liquids. The liquids are collected, drained from the landfill, and treated in the waste water treatment plant. Grab samples of landfill liquids taken and analyzed by Missouri Department of Natural Resources and Schuylkill's independent Commercial Laboratory have tested non-hazardous as illustrated in the attached reports. It is interesting to note that these test results are very similar to the SPLP tests on primary lead processing slag.

Docket Number: LD12-00082

Commenter: Schuylkill Metals Corporation

Comment:

Contaminant Migration Tests have also been run on Schuylkill's loess/clay liner, soils, and storm water from the landfill by Dr. Wallace Fuller. His report was submitted to the EPA under the Land Ban Regulations Comments on August 11, 1989. The Contaminant Movement Calculations utilizing a "Worst" case scenario exclusive of artificial liners, showed that it would take approximately 56.800 years for lead to migrate the 30 feet from the lower most liner. In the proposed rule, the no-migration demonstration period for injected fluids in injection wells is 10,000 years. As stated earlier in these comments, Schuylkill believes the most environmentally sound technology for addressing lead bearing materials/wastes while advancing the statutory goals of waste minimization is "Recycling" to recover lead values. Recycling will reduce the volume of the waste. However, if the furnace slag is required to be stabilized prior to its disposal, the volume of the stabilized slag may be greater than the volume of materials prior to recycling. Although the stabilization process for furnace slag has not been developed as yet, it appears that the volume increase for stabilized slag will be 25-50%. In comparing stabilization with recycling plus slag stabilization with recycling plus slag disposed as is in a secure monofill, waste minimization will be further advanced and economics will be better with the latter processes/products. In addition, recycling plus slag disposal "as is" in a secure monofill is the most environmentally sound technology.

The recycling of low lead level materials (less than 40% lead) needs to be encouraged. If the proposed rules for D008 becomes final without change, many, if not all the generators of these low lead level wastes will require variances and these wastes will have to be stabilized rather than recycled.

Commenter: Lead Industries Association, Inc.

Comment:

B. The Proposed Treatment Standards For D008 Waste Are Infeasible Or Inappropriate

The agency has proposed treatment standards based on best demonstrated available technology ("BDAT") for a number of subcategories of D008 waste. These proposals are either technically unattainable or inappropriate for other reasons.

1. Wastewater Subcategory

The agency's proposed standard of 0.04 mg/l for D008 wastewater is not consistently achievable using the best demonstrated available technology, as data recently submitted by the Battery Council International establish.[3/] These data show that well-designed and well-operated commercial facilities using BDAT obtain treatment levels no lower than 0.50 mg/l 99 percent of the time. Further, the data demonstrate that the

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[3/] See letter to RCRA Docket Section (05-305) from Kurt J. Olson dated December 22, 1989.

Docket Number: LD12-00101 (continued)

Commenter: Lead Industries Association, Inc.

Comment: (continued)

EPA's preferred chemical precipitation method (Carbonate (soda ash) precipitation, settling, and filtration) performs no better than the lime-based chemical precipitation treatment generally used by the industry. LIA accordingly opposes the agency's proposed 0.04 mg/l standard as unrealistic, and, in addition, opposes any effort to require the use of one particular chemical precipant over another for D008 wastewater treatment. LIA supports adoption of the characteristic level as the D008 wastewater treatment standard.

2. Low Lead Subcategory

The agency has proposed a treatment standard of 0.51 mg/l of lead for D008 nonwastewaters that contain less than 2.5% of total lead. This standard is unsound and impractical, and should be rejected in favor of the characteristic level of 5.0 mg/l.

The 0.51 mg/l standard was developed in reliance on treatment data for waste codes from other industries. As discussed in detail in the comments of the Battery Council International ("BCI") and the Secondary Lead Smelters Association ("SLSA"), these industries are not reliable surrogates for D008 waste handled by the lead recycling industry. Moreover, treatment data for the lead recycling industry are now available and are plainly the more supportable source for treatment standards for that industry.

Docket Number: LD12-00101 (continued)

Commenter: Lead Industries Association, Inc.

Comment: (continued)

Reliance on the proper data still does not obviate all the problems with EPA's proposed treatment standard. As noted by the BCI, the designated stabilization procedure actually increases disposable waste and is inconsistent with the waste reduction goals of both the rule and recently introduced legislation.

Finally, even apart from these difficulties, capacity problems make the proposal impractical. The SLSA points out that adequate treatment capacity will not be available by May 18, 1990, and that it will be necessary to grant a nationwide capacity variance for nonwastewater forms of D008 wastes.

3. High Lead Subcategory

EPA's proposal for D008 wastes that contain 2.5 percent or more of total lead specifies "high thermal recovery" as the treatment method. This approach is both lacking in proper support and infeasible because of capacity constraints.

The agency's basis for setting its "high lead" threshold at 2.5 percent is inadequate, as the data on which it relied (recovery of lead from electric arc furnace dust) were based on recovery of lead from materials exceeding 5 percent total lead. EPA has accordingly failed to establish that high thermal recovery is an appropriate BDAT for D008 waste with 2.5 percent or greater total lead.

Docket Number: LD12-00101 (continued)

Commenter: Lead Industries Association, Inc.

Comment: (continued)

Even if this were an appropriate treatment method, serious capacity problems prevent this proposal from being workable. As the SLSA has noted, treatment facility operators do not have sufficient capacity to treat the expected volume of wastes and, moreover, they do not believe it is technologically or economically feasible to treat these wastes as proposed by the agency.

LIA also agrees with the SLSA that low and high concentration lead wastes should not be subject to different BDATs. Such a requirement would impose an unreasonable burden on those generating D008 waste. EPA has not identified any accepted or reliable testing procedures to determine the percentage of total lead in a waste, yet lead waste generators would be held responsible for ascertaining this factor for each unit of waste so as to follow the applicable BDAT. Compliance under these conditions is unduly burdensome.

Further, this distinction is unnecessary and unwise. EPA's goal is to reduce lead to acceptable levels, and generators of D008 wastes should be free to employ whichever approved BDAT best accomplishes that result. If market forces are permitted to select which environmentally sound treatment alternative is most appropriate for a particular waste, both environmental objectives and economic efficiencies could be maximized.

Docket Number: LD12-00117

Commenter: Exide Corporation

Comment:

3. Feasibility of Requiring Secondary Lead Smelting (or Thermal Recovery) for All D008 Wastes in the High Lead Subcategory.

The recycling of lead containing materials in industrial furnaces at secondary lead smelters produces a waste (known as blast furnace slag) which is a dense rock-like material consisting primarily of calcium oxide, iron oxides, and/or silica oxides. In addition, the blast furnace slag may contain lead levels in excess of 2.5% and may, at certain facilities, exhibit the characteristics of a hazardous waste based upon EP toxicity for lead.

There are no known feasible methods for the recycling (secondary lead smelting or thermal recovery) of secondary lead blast furnace slag. Recycling, based upon the proposed regulations, would be required by EPA since the total lead content of this waste may exceed 2.5% total lead. Since the recycling of this waste has not been demonstrated to be feasible and there will be no capacity to recycle these materials by May 9, 1990, the proposed regulations would force the closure of secondary lead smelters (an undesirable effect of the proposed regulations since EPA is already mandating the recycling of lead-containing wastes at secondary lead smelters).

Exide Corporation is also concerned that there may be other D008 wastes in the high lead subcategory which are generated by other industries which will be required (by EPA's land disposal prohibitions) to be recycled at secondary lead smelters but may be, in fact, prohibited from being recycled at secondary lead smelters because they are not considered to be "indigenous" wastes to secondary lead smelting operations. Exide Corporation has already provided comments to EPA on this issue, as part of EPA's proposed rulemaking on the burning of hazardous wastes in industrial furnaces.

3. (Continued)

Given these situations and the fact that national capacity will not be available by May 8, 1990 for the recycling of all lead-containing wastes in the high lead subcategory, Exide Corporation requests that a nationwide capacity variance be granted by EPA for wastes in the high lead subcategory.

Docket Number: LD12-00117

Commenter: Exide Corporation

Comment:

5. (Continued)

Exide Corporation is very concerned that the F006 and K046 wastes which were subjected to EPA stabilization studies are not representative of the entire universe of D008 wastes and thus that the data transfer may not be appropriate. Exide Corporation- is also aware that the Secondary Lead Smelter Association (SLSA) has recently submitted data to EPA regarding the treatment of blast furnace slag by stabilization. Since it is Exide's understanding that the SLSA stabilization data for the blast furnace slag supports the promulgation of a BDAT treatment standard at the characteristic level, Exide Corporation is even more concerned that EPA's data transfer is not appropriate.

Given SLSA's data, the lack of other suitable data, and EPA's acknowledgement (54 Fed. Reg., 48437 and 48439) that treatment data for the lead recycling industry are not available, it is Exide Corporation's belief that, at least until other data (which are more representative of wastes generated by the lead-acid battery manufacturing and secondary lead smelting industries) are generated and assessed, EPA should promulgate a final rule for D008 low lead subcategory wastes based upon the characteristic level of 5.0 mg Pb/l.

Although it is Exide Corporation's understanding that SLSA's existing data for the lead recycling industry suggests that D008 low lead subcategory wastes are able to be stabilized to meet the characteristic level of 5.0 mg Pb/l, Exide Corporation's efforts to locate commercially-available treatment facilities which may be capable of providing waste stabilization services indicates that:

A. Facilities are not equipped to provide stabilization services by May 8, 1990, or

B. Facilities have recognized the need to provide stabilization services by May 8, 1990 but have not received permits for these operations, or

C. Adequate stabilization capacity for increased waste volumes is not available, or

D. The locations of facilities which could provide limited stabilization services are situated in locations which are extremely distant from the waste generation source (a situation which creates increased transportation risks).

Based upon research to date, it is Exide's belief that adequate stabilization capacity will not be available by May 8, 1990 to meet Exide's requirements. Accordingly, Exide Corporation believes that it is necessary for EPA to grant a national capacity variance for nonwastewater forms of D008 wastes until sufficient capacity is available to treat these wastes.

Commenter: Hammond Lead Products, Inc.

Comment:

The characteristic level is the more appropriate treatment standard because this level is the one used to determine whether a waste is hazardous. Unlike a listed hazardous waste, treating a characteristically hazardous waste to a level below the characteristic level would render that waste nonhazardous for regulatory purposes. Accordingly, EPA would be exceeding its authority under RCRA to regulate hazardous waste by setting a treatment standard for D008 waste below the characteristic level of 5.0 mg/l.

Furthermore, the proposed treatment standard of 0.51 mg/l is not appropriate for D008 waste. This is particularly true for wastes such as used refractory bricks from the furnaces at Hammond Lead. This treatment standard was developed by relying on treatment data for other waste codes from other industries. While these data may provide sufficient justification for the applicable treatment standards for these other waste codes and industries, they are not appropriate for establishing a BDAT for D008 wastes.

Although the existing treatment data for D008 wastes generally suggests that some D008 wastes can be treated to the characteristic level, it does not appear that adequate treatment capacity exists for these wastes. While no hazardous waste treatment facility has indicated that it can stabilize used refractory bricks to the proposed BDAT level, several hazardous waste treatment facilities have indicated that existing stabilization capacity is not sufficient to handle all D008 wastes. Accordingly, Hammond Lead requests that a nationwide variance be granted for nonwastewater forms of D008 wastes such as used refractory bricks, until sufficient capacity is available to treat such wastes to the characteristic level of 5.0 mg/l.

Docket Number: LD12-00153 (continued)

Commenter: Hammond Lead Products, Inc.

Comment: (continued)

from lead-bearing materials, EPA's proposed treatment standard fails to take into account the technical and economic feasibility of recovering lead from materials with relatively low percentages of lead. In fact, EPA has made a leap of faith in setting the threshold percentage at 2.5, because the K061 waste treatment data upon which it relied was limited in scope and was based on the recovery of lead from materials with greater than 5% total lead.

In addition to the absence of data to suggest that high thermal recovery is an appropriate BDAT for D008 waste with 2.5% or greater total lead, sufficient high thermal recovery capacity is not currently available nor will sufficient capacity be available by May 8, 1990. While Hammond Lead sends most of its lead-bearing byproducts and other materials to lead recycling facilities, some materials that contain more than 2.5% total lead are not appropriate for high thermal recovery. For example, used refractory bricks that may exhibit the EP toxicity characteristic and contain more than 2.5% total lead are specifically manufactured to withstand the extremely high temperatures of the furnaces used in the manufacturing of lead chemicals. It would not be technologically and economically feasible for the typical lead recycling facility to treat the significant volumes of such wastes that are generated consistent with the proposed BDAT. Accordingly, generators of D008 waste such as Hammond Lead must rely on hazardous waste treatment facilities for high thermal recovery of these wastes. However, representatives from these treatment facilities have indicated that they do not have capacity to treat these wastes nor do they believe that it is technologically or economically feasible to treat these wastes consistent with the proposed BDAT.

Without sufficient national capacity to treat their high lead subcategory wastes, generators such as Hammond Lead would be unable to comply with the proposed BDAT. This is particularly true for materials such as the lead-bearing bricks from the refractory furnaces. Accordingly, Hammond Lead requests that EPA

Docket number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

In general we find many of the capacity issues raised by commenters to be related to treatability issues, not capacity. For example, certain examples of problematic debris waste such as refractory waste are described as capacity issues when the promulgation of separate BDAT standards for all debris will solve the serious problem that exists currently with debris. This problem currently exists for debris derived from F006-F010 wastes for example. At the present time, EPA has provided for treatability variances for contaminated debris to establish BDAT in a case-by-case basis; a capacity extension is totally unwarranted. In addition, EPA has not evaluated recovery furnace technology and the severe limitation of these processes with respect to the physical and chemical form of the waste that can be managed. Many operators of smelting furnaces are telling EPA that many lead wastes are not amenable to recovery. This problem will not go away in two years. Therefore, EPA must allow stabilization for high lead waste. Finally, certain capacity complaints are the result of EPA's selection of obscure or bench scale technologies. For example, vitrification was selected as

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2. Comments of the National Paint and Coatings Association, Inc. (NPCA) (Docket #LD12-D0158)

The HWTC concurs with NPCA that high temperature metals recovery is not feasible at the currently defined lead threshold of 2.5%. EPA should raise this threshold to

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Docket number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

25% lead. This will ensure adequate metals recovery capacity for the greater than 25% lead waste truly amenable to recovery, and adequate stabilization capacity will exist for the low lead category (<2.5% lead). EPA could even set the threshold at 50% lead, as chemical precipitation and stabilization is effective on waste at these concentrations. Sufficient capacity exists to meet the May 8, 1990 deadline. The capacity information published by EPA in the Federal Register supports this. The combined required capacity for both treatment and recovery of lead waste is 73 million gallons per year (see 54 FR48473). Even if all of this lead waste goes to stabilization (i.e., no recovery was required even above 25% Pb), an excess capacity of 479-134.5 or 344.5 million gallons/year is available to manage this waste (54 FR48475). No data was offered by any commenter to challenge the accuracy of this data. EPA is therefore correct in stating adequate stabilization capacity exists for less than 25% lead.

3. Comments of the University of Illinois
(Docket #LD12-00139)

The waste stream identified as 50% lead in sand from a firing range may have presented difficulty disposing of by recycling, since the sand may have caused a recovery furnace difficulty due to the high silica content.

The waste is amenable to stabilization, and this would negate a capacity variance. As a worst case, a treatability variance may be warranted.

4. Comments of Olin Chemicals (Docket #LD12-00129) and of Exide Corporation (Docket #LD12-00117)

The HWTC concurs with Olin Corporation that all high level lead wastes may not be amenable to thermal recovery. This is not a capacity issue, however, but one of treatability. These wastes, although not amenable to thermal recovery, could be stabilized, although an alternate treatment standard might be required for stabilization of waste in excess of 50% lead. EPA should not grant a capacity variance for these wastes as adequate stabilization capacity exists currently for these wastes. Landfilling of a stabilized high lead subcategory waste is more protective of the environment than the continued land disposal of untreated high lead waste. It makes little sense to restrict low lead waste from land disposal on May 8th, while the more concentrated and toxic high lead waste continues to be land disposed after May 8th.

7.3 INSUFFICIENT THERMAL RECOVERY CAPACITY FOR D008 NONWASTEWATERS

Summary:

A total of 18 commenters (Kaiser Aluminum (86), Lead Industries Association, Inc. (LIA; 101), Thomson Consumer Electronics, Inc. (103), Exide Corporation (117), Olin Chemicals (129), CIBA-GEIGY Corporation (136), Hammond Lead Products (153), Secondary Lead Smelting Association (SLSA; 161), RSR Corporation (162), East Penn Manufacturing (174), Battery Council International (BCI; 178), Lubrizol (184), GNB, Inc. (202), Electric Utilities (204), Vision-Ease (213), American Foundrymen's Society (AFS; 222), Owens-Illinois (262), and Hazardous Waste Treatment Council (HWTC; L0247) submitted comments on this issue. Fifteen commenters (Kaiser Aluminum (86), LIA (101), Thomson Consumer Electronics, Inc. (103), Exide (117), Olin Chemicals (129), CIBA-GEIGY Corporation (136), Hammond Lead Products (153), (SLSA) (161), RSR Corporation (162), East Penn Manufacturing (174), (BCI) (178), Lubrizol (184), GNB, Inc. (202), Vision-Ease (213), and Owens-Illinois (262)) stated that there is insufficient national capacity to treat high lead subcategory wastes using thermal recovery.

Three commenters (LIA (101), Exide (117), and Hammond Lead Products, Inc. (153)) stated that thermal recovery is not technologically or economically feasible. Exide stated that some D008 high lead wastes which require recycling could be prohibited from recycling at secondary smelters because they are not considered indigenous wastes to secondary lead smelting operations. Six commenters (Thomson Consumer Electronics, Inc. (103), Exide (117), Olin Chemicals (129), SLSA (161), Lubrizol (184), and Owens-Illinois (262)) expressed concern that the transfer of K061 treatment by thermal recovery to high lead D008 nonwastewaters fails to account for variations among high lead D008 nonwastewaters. Examples of unique forms of lead waste included: Thomson's (103) lead-containing glass waste, Hammond Lead's lead-bearing refractory bricks, and CIBA-GEIGY's (136) oxides of lead. CIBA-GEIGY (136) asserted that it had made a concerted effort to find a metals recovery facility for its waste. HWTC cited CIBA-GEIGY's (136) inability to find a recovery facility for its high lead glass wastes, possibly because of its high silica content, as another reason why EPA should allow the use of stabilization for high lead subcategory waste. Because of the technological and capacity limitations, four commenters (Exide (117), Olin Chemicals (129), Hammond Lead (153), and SLSA (161)) requested a capacity variance for thermal recovery of high lead subcategory waste.

HWTC (L0247) agreed with Olin Chemicals (129) that all high level lead wastes may not be amenable to thermal recovery, but asserted that this is a treatability, not a capacity issue. HWTC stated EPA should not grant a capacity variance for these wastes since adequate capacity existed to stabilize lead wastes with up to 50% lead. HWTC disagreed with Exide Corporation's (117) request for a capacity variance for thermal recovery, instead asserting that EPA should raise the recovery threshold to waste which exceeds 50% lead, and allow for stabilization below this threshold.

Owens-Illinois requested an interim national capacity variance until BDAT and performance standards are demonstrated for all characteristic wastes. The American Foundrymen's Society, Inc. (AFS; 222) requested that EPA grant a two-year capacity variance for foundry wastes because treatment standards for D008 waste are based on wastes dissimilar to those generated by foundries and should not apply to foundry wastes.

Amoco (L0020) asserted that thermal recovery of lead from the spent Bender catalyst used at its Whiting Refinery is not currently feasible. Amoco submitted documentation from Petrolite which explains the infeasibility of recycling the spent Bender catalyst by thermal recovery. Amoco added that stabilization of the spent catalyst has been successful in meeting the proposed treatment standard of .51 mg/L for the low lead subcategory.

Kaiser Aluminum (86) asserted that data were missing from Table III.B.1.(d) of the preamble, and that the preamble did not indicate a capacity variance for high lead D008 nonwastewaters. Another commenter (Vision-Ease (213)) questioned whether there was capacity to thermally recover their 400-500 tons/year of glass waste and requested time to make arrangements with an outside wastehandler.

One commenter (Electric Utilities (204)) requested a two-year capacity variance for waste mixtures, such as soil and debris containing PCBs and lead, not amenable to thermal recovery. Electric Utilities (204) urged EPA to rethink its proposed treatment methods for high lead D008, taking such waste mixtures into account. The commenter stated that thermal recovery could be prohibited under the Toxic Substances Control Act restricting the combustion of PCB wastes.

Response:

The commenters' concern was capacity if there was a high lead subcategory mandating recovery. EPA is not adopting this scheme. Only lead-acid batteries must be recovered in the final rule. EPA also has determined that there is adequate stabilization capacity for other non-inorganic debris D008 nonwastewaters.

Comments:

The comments relevant to insufficient thermal recovery capacity for D008 nonwastewaters are presented in the following order:

- Kaiser Aluminum (86: p. 1);
- Lead Industries Association, Inc. (101: p. 9)
- Thomson Consumer Electronics, Inc. (103: pp. 1-2);
- Exide (117: p. 3);
- Olin Chemicals (129: p. 18);
- CIBA-GEIGY Corporation (136: p. 1-2, Attachment);
- Hammond Lead Products, Inc. (153: p. 4-5);
- Secondary Lead Smelting Association, Inc. (SLSA; 161: pp. 9-11);
- RSR Corporation (162: p. 30-32);
- East Penn Manufacturing Co., Inc.(174: pp. 4-6,17,23-24);
- Battery Council International (BCI; 178: pp. 11-12);
- Lubrizol (184: pp. 4-5);
- GNB, Inc. (202: pp. 11-13);
- Electric Utilities (204: p.16-17);
- Vision-Ease (213: p. 2);
- American Foundrymen's Society, Inc. (AFS; 222: pp. 1,2,6).
- Owens-Illinois (262: p. 2); and
- HWTC (L0247: pp. 9-10).

Commenter: Kaiser Aluminum

Comment:

54 FR 48475 - *Table III.B.1.(c). shows that no national capacity exists for Thermal Recovery which is the specified treatment technology for high lead D008 non-wastewaters. This data however is not carried over to Table III.B.1.(D) where variances due to a lack of national capacity are summarized.*

54 FR 48510 - *The proposed 40 CFR 268.35 does not carry forward any variance for high lead bearing D008 even though the preamble clearly shows no national capacity is available.*

Docket Number: LD12-00101 (continued)

Commenter: Lead Industries Association, Inc.

Comment: (continued)

Reliance on the proper data still does not obviate all the problems with EPA's proposed treatment standard. As noted by the BCI, the designated stabilization procedure actually increases disposable waste and is inconsistent with the waste reduction goals of both the rule and recently introduced legislation.

Finally, even apart from these difficulties, capacity problems make the proposal impractical. The SLSA points out that adequate treatment capacity will not be available by May 18, 1990, and that it will be necessary to grant a nationwide capacity variance for nonwastewater forms of D008 wastes.

3. High Lead Subcategory

EPA's proposal for D008 wastes that contain 2.5 percent or more of total lead specifies "high thermal recovery" as the treatment method. This approach is both lacking in proper support and infeasible because of capacity constraints.

The agency's basis for setting its "high lead" threshold at 2.5 percent is inadequate, as the data on which it relied (recovery of lead from electric arc furnace dust) were based on recovery of lead from materials exceeding 5 percent total lead. EPA has accordingly failed to establish that high thermal recovery is an appropriate BDAT for D008 waste with 2.5 percent or greater total lead.

Docket Number: LD12-00101 (continued)

Commenter: Lead Industries Association, Inc.

Comment: (continued)

Even if this were an appropriate treatment method, serious capacity problems prevent this proposal from being workable. As the SLSA has noted, treatment facility operators do not have sufficient capacity to treat the expected volume of wastes and, moreover, they do not believe it is technologically or economically feasible to treat these wastes as proposed by the agency.

LIA also agrees with the SLSA that low and high concentration lead wastes should not be subject to different BDATs. Such a requirement would impose an unreasonable burden on those generating D008 waste. EPA has not identified any accepted or reliable testing procedures to determine the percentage of total lead in a waste, yet lead waste generators would be held responsible for ascertaining this factor for each unit of waste so as to follow the applicable BDAT. Compliance under these conditions is unduly burdensome.

Further, this distinction is unnecessary and unwise. EPA's goal is to reduce lead to acceptable levels, and generators of D008 wastes should be free to employ whichever approved BDAT best accomplishes that result. If market forces are permitted to select which environmentally sound treatment alternative is most appropriate for a particular waste, both environmental objectives and economic efficiencies could be maximized.

Docket Number: LD12-00103

Commenter: Thomson Consumer Electronics, Inc.

Comment:

Thomson's glass waste contains more than 2.5% lead. For this "high lead" waste, EPA has proposed to promulgate a treatment standard of "Thermal Recovery as a Method of Treatment." Thomson is concerned that EPA has proposed this treatment without taking into account the various unique forms of D008 waste potentially subject to the treatment requirement. In the preamble, EPA states as the sole basis for this proposed standard "data available to the Agency [which] indicates that lead can be recovered from electric arc furnace dust (K061) by high temperature metals recovery." 54 Fed. Reg. at 48439. It is unreasonable to use data concerning a single type of waste as the basis for a required BDAT methodology potentially applicable to a large number of different types of waste. This is readily apparent with respect to Thomson's D008 wastes. Thomson is not aware of any currently available thermal recovery facility which could treat its lead-containing glass waste as would be required under the proposed rule. Moreover, Thomson has no information which would indicate that thermal recovery technology can be used on glass waste such as the type it generates.

Commenter: Exide Corporation

Comment:

3. Feasibility of Requiring Secondary Lead Smelting (or Thermal Recovery) for All D008 Wastes in the High Lead Subcategory.

The recycling of lead containing materials in industrial furnaces at secondary lead smelters produces a waste (known as blast furnace slag) which is a dense rock-like material consisting primarily of calcium oxide, iron oxides, and/or silica oxides. In addition, the blast furnace slag may contain lead levels in excess of 2.5% and may, at certain facilities, exhibit the characteristics of a hazardous waste based upon EP toxicity for lead.

There are no known feasible methods for the recycling (secondary lead smelting or thermal recovery) of secondary lead blast furnace slag. Recycling, based upon the proposed regulations, would be required by EPA since the total lead content of this waste may exceed 2.5% total lead. Since the recycling of this waste has not been demonstrated to be feasible and there will be no capacity to recycle these materials by May 9, 1990, the proposed regulations would force the closure of secondary lead smelters (an undesirable effect of the proposed regulations since EPA is already mandating the recycling of lead-containing wastes at secondary lead smelters).

Exide Corporation is also concerned that there may be other D008 wastes in the high lead subcategory which are generated by other industries which will be required (by EPA's land disposal prohibitions) to be recycled at secondary lead smelters but may be, in fact, prohibited from being recycled at secondary lead smelters because they are not considered to be "indigenous" wastes to secondary lead smelting operations. Exide Corporation has already provided comments to EPA on this issue, as part of EPA's proposed rulemaking on the burning of hazardous wastes in industrial furnaces.

3. (Continued)

Given these situations and the fact that national capacity will not be available by May 8, 1990 for the recycling of all lead-containing wastes in the high lead subcategory, Exide Corporation requests that a nationwide capacity variance be granted by EPA for wastes in the high lead subcategory.

Docket Number: LD12-00129

Commenter: Olin Chemicals

Comment:

Lead (III.A.5.f.)

The Agency has proposed splitting the D008 Lead non-wastewater BDAT treatment standard based upon a total lead level of 2.5%. Any lead bearing hazardous waste (D008) with a lead content greater than 2.5% would be subject to thermal recovery and the lower lead wastes would have to be treated to a lead TCLP of 0.51 mg/l.

In the discussion, the Agency states that "...the Agency has data that indicate that wastes containing concentrations of lead as low as 5 percent can be recovered." Nowhere does USEPA state that they have data that lead wastes between 2.5% and 5% can be recovered effectively. In fact, the Agency states that the 2.5% cut-off level is based upon limited data.

Docket Number: LD12-00129 (continued)

Commenter: Olin Chemicals

Comment: (continued)

Further , by using limited data, the Agency has not addressed the different waste materials and forms of D008. By specifying thermal recovery, USEPA has categorical stated that there are no outside interferences to this type of treatment. Has the Agency determined whether thermal recovery will be hampered by materials contaminated with high concentrations of lead, such as baghouse bags?

Olin requests that the 2.5% cut-off level be removed and that the Agency offer the option of stabilization or thermal recovery until it can develop an adequate and technically justifiable data base.

The Agency specifies that there is sufficient capacity for resmelting these D008 High Level wastes. Again, the Agency has not taken into consideration the various forms of the wastes and whether the commercially available thermal recovery facilities will accept all D008 High Level Lead wastes. Therefore, if the Agency continues to require thermal recovery for High Level Lead wastes (D008), Olin requests a two year national capacity variance be granted until it is determined that adequate available treatment capacity exists.

Docket Number: LD12-00136

Commenter: CIBA-GEIGY Corporation

Comment:

1. High Lead D008 Wastes Not Amenable to Thermal Recovery

EPA has proposed recovery for D008 non-wastewaters containing 2.5 percent or more lead. This is based on the fact that "The Agency has identified some particular D008 wastes which appear to have good recovery potential, such as lead acid batteries, lead dross and electric arc furnace dust" (54 FR 48439).

Docket Number: LD12-00136 (continued)

Commenter: CIBA-GEIGY Corporation

Comment: (continued)

However, not all D008 high lead wastes are amenable to recovery. For example, one of CIBA-GEIGY's facilities produces glass enamels. In glass enamel manufacturing, the glass frit and pigment raw materials are oxides of lead, cadmium, and chromium, as well as various other metals depending on the specific color required. Equipment and container washing during the manufacturing process produces wastewater treatment sludge. Work area ventilation produces a mixed product dust waste. Off-specification and obsolete product wastes are also RCRA hazardous wastes when disposed. Most of these wastes contain more than 2.5 percent lead.

A concerted effort has been made to locate a metal recovery facility for these wastes. Unfortunately, no commercial facility could be found. These wastes are not amenable to recovery because of their mixed metal oxide content and the crystalline structure of the encapsulating glass matrix.

Testing has shown that these wastes can be effectively stabilized prior to disposal in order to reduce EP toxicity values to acceptable levels. We have enclosed test information showing the results from stabilization trials.

Tests have been performed to evaluate two treatment technologies: stabilization and vitrification. Both technologies use high temperatures and additives. The stabilization procedure requires mixing the waste with clays, flint and calcium chloride. This mixture is then fired at 1950° F to produce a ceramic material. The fired material has been tested using the EP Toxicity test and the results are presented in Table 1. This stabilization method appears to yield treated material that meets the proposed BDAT treatment standards for low lead wastes (0.51 mg/l).

The vitrification method adds borax (a fluxing agent) to the waste stream prior to a high temperature melt at 2300° F. All of the high temperature melts, some with lead oxide concentrations of up to 75 percent and no added borax, exhibited a single, homogeneous, molten (glass) phase. The leachability of the metals from the vitrified material is greater than that of the stabilized material, as shown in Table 2. In most tests the extractable lead levels are above the proposed BDAT treatment standard for low lead wastes (0.51 mg/l).

The thermal recovery of lead was not a possibility in any of the melts. The thermal recovery of lead appears to be strongly dependent upon having elemental or metallic lead in the original waste. EPA must allow for stabilization of high lead D008 wastes since not all high lead wastes, especially lead oxides, are amenable to thermal recovery.

Commenter: Hammond Lead Products, Inc.

Comment:

II. DISCUSSION

A. Proposed Treatment Standards for D008 Wastes

1. Low Lead v. High Lead D008 Wastes

In its proposed land disposal restrictions for D008 wastes, EPA proposed two separate Best Demonstrated Available Technologies ("BDATs") based on the percentage of total lead in the waste. Nonwastewater forms of D008 wastes that contain less than 2.5% total lead must meet a proposed treatment standard of 0.51 mg/l based on stabilization. For wastes that contain 2.5% or greater total lead, EPA has proposed a BDAT treatment standard of high thermal recovery. By setting the threshold percentage for D008 wastes at 2.5%, EPA has failed to recognize the unfeasibility of recovering lead from wastes with relatively low percentages of lead (e.g., 2.5% - 10%).

Even if the threshold percentage was set at a more reasonable level and sufficient capacity were available for high thermal recovery, Hammond Lead believes that the distinction between low lead and high lead BDATs is unnecessary and counterproductive. Generators of D008 wastes should be free to avail themselves of the most appropriate BDAT for each waste, whether it be stabilization or high thermal recovery. Market forces should dictate which of these environmentally sound BDATs are to be used for any given waste. EPA's proposal based on low lead and high lead subcategories places generators of D008 waste in an impossible situation that could lead to the improper disposal and handling of these wastes.

The promulgation of different BDATs for the low lead and high lead subcategories would impose an unreasonable burden on generators of D008 waste. First, generators would be required to test and to analyze each unit of waste as it was generated in order to determine which BDAT was applicable. Second, EPA has failed to identify any appropriate or acceptable testing procedures to determine the percentage of total lead in a waste. Without such guidance, it is virtually impossible

Docket Number: LD12-00153 (continued)

Commenter: Hammond Lead Products, Inc.

Comment: (continued)

to confirm what is the applicable BDAT. For example, Hammond Lead uses furnaces to manufacture some of the lead chemicals at its lead chemical manufacturing facilities. These furnaces are lined with refractory brick which makes direct contact with the lead. The bricks gradually corrode and periodically must be replaced. When these bricks are removed from the furnaces and tested for lead, they exhibit EP Toxic characteristic for lead. The lead concentration in the brick waste varies from sample to sample. The highest lead concentration will be found in the refractory brick samples which come in direct contact with the lead chemicals in the furnace. Reduced lead concentration will be found in the refractory bricks which do not come in direct contact with the lead chemicals in the furnace. Depending on which sampling techniques are used to determine the percentage of total lead in these bricks, different BDATs would be required.

Finally, as discussed above, if the regulatory options for handling D008 waste are too inflexible, generators may resort to improper disposal practices, thereby defeating the objectives of the land disposal restrictions. Hammond Lead proposes that EPA eliminate the distinction between low lead and high lead D008 wastes, give generators the choice between stabilization and high thermal recovery as the applicable BDAT, and set the BDAT treatment standard at the characteristic level of 5.0 mg/l.

2. Stabilization BDAT

Relying on treatment data for other waste codes from other industries, EPA has proposed a treatment standard of 0.51 mg/l of lead for nonwastewater forms of D008 that contain less than 2.5% of total lead. Alternatively, EPA has proposed setting the treatment standard for nonwastewater forms of D008 at the characteristic level of 5.0 mg/l of lead. Hammond Lead supports EPA's proposal to set the treatment standard for D008 wastes at the characteristic level.

Docket Number: LD12-00153

Commenter: Hammond Lead Products, Inc.

Comment: 35 -

The characteristic level is the more appropriate treatment standard because this level is the one used to determine whether a waste is hazardous. Unlike a listed hazardous waste, treating a characteristically hazardous waste to a level below the characteristic level would render that waste nonhazardous for regulatory purposes. Accordingly, EPA would be exceeding its authority under RCRA to regulate hazardous waste by setting a treatment standard for D008 waste below the characteristic level of 5.0 mg/l.

Furthermore, the proposed treatment standard of 0.51 mg/l is not appropriate for D008 waste. This is particularly true for wastes such as used refractory bricks from the furnaces at Hammond Lead. This treatment standard was developed by relying on treatment data for other waste codes from other industries. While these data may provide sufficient justification for the applicable treatment standards for these other waste codes and industries, they are not appropriate for establishing a BDAT for D008 wastes.

Although the existing treatment data for D008 wastes generally suggests that some D008 wastes can be treated to the characteristic level, it does not appear that adequate treatment capacity exists for these wastes. While no hazardous waste treatment facility has indicated that it can stabilize used refractory bricks to the proposed BDAT level, several hazardous waste treatment facilities have indicated that existing stabilization capacity is not sufficient to handle all D008 wastes. Accordingly, Hammond Lead requests that a nationwide variance be granted for nonwastewater forms of D008 wastes such as used refractory bricks, until sufficient capacity is available to treat such wastes to the characteristic level of 5.0 mg/l.

Docket Number: LD12-00153

Commenter: Hammond Lead Products, Inc.

Comment:

3. High Thermal Recovery BDAT

For nonwastewater forms of D008 waste that contain 2.5% or more of total lead, EPA has proposed a BDAT treatment standard of "high thermal recovery." While Hammond Lead generally supports efforts to encourage the recovery of lead

Docket Number: LD12-00153 (continued)

Commenter: Hammond Lead Products, Inc.

Comment: (continued)

from lead-bearing materials, EPA's proposed treatment standard fails to take into account the technical and economic feasibility of recovering lead from materials with relatively low percentages of lead. In fact, EPA has made a leap of faith in setting the threshold percentage at 2.5, because the K061 waste treatment data upon which it relied was limited in scope and was based on the recovery of lead from materials with greater than 5% total lead.

In addition to the absence of data to suggest that high thermal recovery is an appropriate BDAT for D008 waste with 2.5% or greater total lead, sufficient high thermal recovery capacity is not currently available nor will sufficient capacity be available by May 8, 1990. While Hammond Lead sends most of its lead-bearing byproducts and other materials to lead recycling facilities, some materials that contain more than 2.5% total lead are not appropriate for high thermal recovery. For example, used refractory bricks that may exhibit the EP toxicity characteristic and contain more than 2.5% total lead are specifically manufactured to withstand the extremely high temperatures of the furnaces used in the manufacturing of lead chemicals. It would not be technologically and economically feasible for the typical lead recycling facility to treat the significant volumes of such wastes that are generated consistent with the proposed BDAT. Accordingly, generators of D008 waste such as Hammond Lead must rely on hazardous waste treatment facilities for high thermal recovery of these wastes. However, representatives from these treatment facilities have indicated that they do not have capacity to treat these wastes nor do they believe that it is technologically or economically feasible to treat these wastes consistent with the proposed BDAT.

Without sufficient national capacity to treat their high lead subcategory wastes, generators such as Hammond Lead would be unable to comply with the proposed BDAT. This is particularly true for materials such as the lead-bearing bricks from the refractory furnaces. Accordingly, Hammond Lead requests that EPA

Docket Number: LD12-00153 (continued)

Commenter: Hammond Lead Products, Inc.

Comment: (continued)

grant generators of D008 waste a national capacity variance from the high thermal recovery BDAT.

B. Lead-Contaminated Soil and Debris

In its proposed land disposal restrictions, EPA has not specifically proposed a national capacity variance for soil and debris contaminated with lead. In a separate rulemaking, however, EPA has requested comments on whether land disposal restrictions should apply to response actions conducted pursuant to CERCLA. 54 Fed. Reg. 41566 (1989). Specifically, EPA indicated that the removal, treatment, and replacement of contaminated soil could be allowed without triggering the applicable land disposal restrictions because such activities "simply serve to improve the characteristics of disposed waste to insure long-term environmental protection" and would enable property owners "to design sensible, protective remedies that are tailored to fit site-specific conditions" without imposing additional regulatory burdens.

Notwithstanding this rulemaking, a national capacity variance for lead-contaminated soil and debris should be granted in order both to avoid any impediment to prompt and environmentally sound cleanups under CERCLA, and to encourage voluntary cleanups at contaminated sites. Without such a variance from the land disposal restrictions, property owners would be reluctant to conduct any cleanup voluntarily and to assume the additional expense of compliance with the applicable land disposal restrictions. Rather, property owners would be encouraged to wait until a cleanup order under CERCLA was issued. Furthermore, such a national capacity variance would be appropriate until sufficient capacity to treat the contaminated soil and debris to the proposed BDAT standards becomes available. Accordingly, a national capacity variance for lead-contaminated soil and debris is consistent with EPA's policy to encourage prompt cleanups under CERCLA, as well

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

4. High Thermal Recovery BDAT

For nonwastewater forms of D008 waste that contain 2.5% or more of total lead, EPA has proposed a BDAT treatment standard of "high thermal recovery." While the SLSA generally supports efforts to encourage the recovery of lead from lead-bearing materials, EPA's proposed treatment standard fails to take into account the technical and economic feasibility of recovering lead from materials with relatively low percentages of lead. In fact, EPA has made a leap of faith in setting the threshold percentage at 2.5, because the K061 waste treatment data upon which it relied was limited in scope and was based on the recovery of lead from materials with greater than 5% total lead.

a. Data Base for High Thermal Recovery BDAT

The transfer of the electric arc furnace dust (K061) thermal recovery BDAT to establish a BDAT for D008 waste is inappropriate. Specifically, the physical and chemical characteristics of blast slag and other furnace residues generated by the lead recycling industry do not resemble K061 wastes. EPA stated in the preamble to the proposed rulemaking that "the Agency has data that indicate that wastes containing concentrations of lead as low as 5% can be recovered." 54 Fed.

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

Reg. at 48438. No correlation, however, exists between this K061 data and the slag or other furnace residues from the lead recycling industry. Furthermore, no existing operations or known technologies are capable of consistently removing the lead content of slag.

The BDAT Background Document for K061 wastes indicates that prior to thermal recovery, K061 typically contains 12 to 32% zinc. These levels are radically higher than secondary lead slag which typically contains less than 0.5% zinc. The large quantity of zinc in K061 wastes can significantly influence the thermal recovery process. Recognizing this fact, the Agency chose a minimum zinc concentration of 15% for demonstration that K061 can be thermally recovered. (*See* K061 Background Document p. 03 - 3).

K061 is primarily comprised of metal oxides, while slag principally contains large quantities of sulfur and silicate compounds. This difference can also greatly alter the thermal recovery process and results because lead can be extracted more readily from matrices of metal oxides than from matrices of sulfur and silicate compounds. EPA states that for K061 wastes, the calcium to silica ("Ca to Si") ratio must be maintained for the most effective treatment. The Ca to Si ratios for K061 wastes are reported to range from 3.33 to 9.84. Slag and other furnace residues from the lead recycling industry normally have Ca to Si ratios well below 1.0.

Thermal operational experiences in the lead recycling industry strongly indicate that their waste products cannot be consistently processed to the 2.5% lead concentration or to consistently pass the TCLP or EP toxicity tests. Therefore, the proposed BDAT of 0.51 mg/l for D008 wastes cannot be consistently attained using thermal treatment.

b. National Capacity for High Thermal Recovery

In addition to the absence of data to suggest that high thermal recovery is an appropriate BDAT for D008 waste with 2.5% or greater total lead, sufficient high

Docket Number: LD12-00161 (continued)

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment: (continued)

thermal recovery capacity is not currently available nor will sufficient capacity be available by May 8, 1990. The high-volume, low toxicity, lead-bearing waste generated by lead recycling facilities (i.e., blast slag) may contain as much as 10% of total lead and would, therefore, generally be considered a high lead subcategory waste under the proposed BDAT. It would not be technologically and economically feasible for the typical lead recycling facility to treat the significant volumes of such wastes that are generated to achieve the proposed BDAT. Accordingly, the lead recycling industry must rely on hazardous waste treatment facilities for high thermal recovery of these wastes. As demonstrated in the attached correspondence (Appendix B), however, representatives from these treatment facilities have indicated to SLSA members that they do not have capacity to treat these wastes nor do they believe that it is technologically or economically feasible to treat these wastes consistent with the proposed BDAT.

Without sufficient national capacity to treat their high lead subcategory wastes, lead recycling facilities would be unable to comply with the proposed BDAT. Accordingly, the SLSA requests that EPA grant the lead recycling industry a national capacity variance from the high thermal recovery BDAT.

Docket Number: LD12-00162 (continued)

Commenter: RSR Corporation

Comment: [redacted]

F. The Distinction Between "Low Lead" and "High Lead" D008 Nonwastewater Subcategories is Technically Unsound

EPA has proposed separate treatment standards for wastes containing "low lead" and "high lead" concentration levels. Low lead wastes contain lead concentrations up to 2.5 percent, and high lead wastes contain lead in excess of 2.5 percent. 54 Fed. Reg. 48438 (col. 2). For low lead levels, EPA has proposed stabilization which results in leachable lead of 0.51 mg/l. Alternatively, EPA has proposed setting BDAT at 5.0 mg/l of lead, the characteristic level. For high lead level wastes, EPA has proposed "thermal recovery." Id. at 48439 (col. 1).

EPA's distinction between these two subcategories is arbitrary and unsubstantiated. EPA should abandon the distinction and establish a treatment standard of 5.0 mg/l as the treatment standard for all D008 nonwastewaters based on the characteristic level for lead. In addition, EPA should issue a national capacity variance for nonwastewater forms of D008 wastes until sufficient capacity is available to treat wastes from the lead recycling industry to proposed BDAT levels.

EPA states that the five percent lower limit of lead concentration data that it believes demonstrates the technical feasibility of recovery "correlates" well with the 2.5 percent

Docket Number: LD12-00162 (continued)

Commenter: RSR Corporation

Comment:

maximum concentration in the wastes that were demonstrated to be stabilized effectively. In RSR's view, a concentration difference of 25,000 mg/kg (2.5 percent), which is a 100 percent difference with respect to the lower lead concentration, is not a good correlation in any scientific sense of which RSR is aware.

Further, EPA's assumption that waste containing between 2.5 and 5 percent lead are recoverable by "demonstrated" and "available" technologies is not supported by EPA's data, which do not demonstrate practical recovery of lead from waste containing less than 5 percent lead.

Moreover, EPA has undertaken no analysis to determine whether adequate capacity exists to accommodate the influx of materials that will be directed to secondary lead facilities as a result of this rulemaking. Adequate capacity may not exist for these purposes. Indeed, the Secondary Lead Smelters Association, Inc. ("SLSA") has submitted data to EPA that suggest adequate treatment capacity does not exist. See Comments of SLSA on Proposed Land Disposal Restrictions on Final Third Restricted Wastes (January 8, 1990). RSR supports the comments of SLSA in this regard, and urges EPA to issue a national capacity variance for nonwastewater forms of D008 wastes until sufficient capacity is available to treat wastes from the lead recycling industry to propose BDAT levels.

Finally, as more fully set out in RSR's comments in response to the proposed supplement to the May 1987 proposal

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment:

East Penn's secondary smelting process currently generates slag and matte which still contains equal or greater than 2.5% lead, yet there is not presently available a feasible means of further thermal recovery or stabilization. Reuse of the slag and matte which exhibits equal or greater than 2.5% lead in the thermal recovery process has not consistently produced residues with leach levels below the characteristic level of 5.0 mg/l. Additionally, the operational costs of reusing these materials through thermal recovery exceeds the value of the lead recovered. Further, information available to East Penn indicates the capacity to treat the slag and matte by stabilization is very limited and that the slag and matte cannot be treated by stabilization without further processing to significantly reduce the particle size prior to stabilization. Therefore, East Penn submits that the agency's definition of the High Lead Subcategory and the Low Lead Subcategory based on the treatability by stabilization or thermal recovery is unsupportable as applied to the lead acid batteries and waste slag and matte produced by secondary smelting of spent lead acid batteries.

Secondary smelting of spent lead acid batteries for lead recovery is an environmentally beneficial operation which is consistent and responsive to the congressional findings and objectives set forth in the Resource Conservation and Recovery Act

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

("RCRA")[2]. East Penn recycles over 3 million spent lead acid batteries annually; every such battery recycled is one less battery that will be sent to a landfill or illegally disposed of in some other fashion. Based upon these valid policy reasons, EPA should, therefore, set treatment standards which will ensure that this desirable activity is continued until technology can be developed to produce residues from the secondary smelting operations with leach levels consistently below the characteristic level of 5.0 mg/l or until capacity can be developed to treat the residues through stabilization.[3]

From a legal standpoint there is no reasonable basis to support EPA's decision to apply a treatment standard to the slag

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[2] See RCRA Section 1002(c), 42 U.S.C. § 6901(c) (reciting the congressional finding that "(1) millions of tons of recoverable material which could be used are needlessly buried each year; (2) methods are available to separate usable materials from solid waste; and (3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments"); RCRA Section 1003(a)(6), 42 U.S.C. § 6902(a)(6) (articulating the congressional objective of "minimizing . . . the land disposal of hazardous waste by encouraging . . . materials recovery"). See also H.R. Rep. No. 1491, 94th Cong., 2d Sess. 11 (1976) (RCRA "proposes a way to lessen the drain on our domestic resources and to decrease our dependence on foreign sources of raw material and energy, both of which can be reclaimed from waste").

[3] To do otherwise could result in a rule contrary to the policy of RCRA in setting recycling as a desirable goal. Unrealistic treatment standards for the waste produced in recycling could have the effect of "taxing" recycling and thereby make the use of virgin lead more attractive.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

and matte produced from the secondary smelting process which exhibits EP Toxicity for lead since the lead acid batteries have already undergone the chosen BDAT method of treatment. RCRA does not mandate that the residue from the lead acid batteries be rendered completely non-hazardous before it can be land disposed. Further, if a treatment standard is imposed to the slag and matte, EPA lacks authority under RCRA to set the standard below the characteristic leachate level of 5.0 mg/l. Finally, if a treatment standard of 5.0 mg/l is applied to the slag and matte, it will be an abuse of the agency's discretion if a national capacity variance is not granted.

Accordingly, the treatment standard for lead acid batteries should be thermal recovery as a method of treatment, however, the resulting residue should not be required to meet a treatment standard of less than 5.0 mg/l leachable lead prior to land disposal. In the alternative, East Penn submits that the treatment standard for lead acid batteries should be thermal recovery as a method of treatment, with the resulting residue being required to leach lead at a level of less than 5.0 mg/l. However, a national capacity variance should be granted for the resulting slag and matte residue which fails to leach lead at levels below the characteristic level until adequate treatment technology and capacity becomes available.

Commenter: East Penn Manufacturing Co., Inc.

Comment:

Presently, it appears that the operational cost to reuse the slag and matte through East Penn's thermal recovery process for further lead recovery exceeds the value of the lead recovered, thus rendering the process economically infeasible. (See discussion under Section IV below).

Information currently available to East Penn indicates that the capacity to treat the slag and matte by stabilization is very limited. See letters attached as Exhibits "D", "E" and "F". It also appears that any stabilization process currently available will require that the waste be comprised of relatively small particles, one-half inch in diameter or smaller. Both the slag and matte now generated by East Penn range in particle size from fines to 16" by 16" by 16" irregular shapes and would require size reduction prior to stabilization. This size reduction can be obtained either through grinding or granulation, but neither method will be available until sometime after May 8, 1990, the effective date of the land disposal restrictions.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

C. If a Treatment Standard of 5.0 mg/l is Applied to the Slag and Matte Exhibiting EP Toxicity for Lead, a National Capacity Variance Must be Granted

In the proposed rules, EPA acknowledges that the treatment standards presented for all lead wastes are based on a limited amount of treatment data. East Penn has provided information that shows that slag and matte containing 2.5% or greater lead content cannot be consistently treated by the available methods of thermal recovery to reduce the EP Toxicity level of the resulting residue to below 5.0 mg/l. Thermal recovery is therefore not an available method of treatment for these residues and the proposed BDAT for the High Lead Subcategory of D008 Wastes cannot be applied. East Penn has also demonstrated that there is insufficient capacity to treat the slag and matte containing below 2.5% lead or containing equal to or above 2.5% lead by stabilization. RCRA provides the Agency with the authority to grant national capacity variances from the statutory effective dates, not to exceed two years, if there is insufficient alternative protective treatment, recovery or disposal capacity for the wastes. 42 U.S.C. § 6924(h)(2). If the Agency fails to do so in this instance, it would clearly be an abuse of its discretion.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

7-97 Lead and Zinc Wastes

MILL SERVICE, Inc
INDUSTRIAL WASTE DISPOSAL
Since 1957

1515 WASHINGTON ROAD • PITTSBURGH, PA 15241-1498 • 412 343-900[illegible]
FAX 412 854-[illegible]

December 21, 1989

Mr. Daniel G. Dellicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Main Office
Lyon Station, Pennsylvania 19536

Dear Mr. Dellicker:

Please be advised that Mill Service, Inc. does not currently have the technology or capacity, nor do we expect to have the technology or capacity by May 8, 1990, to handle either the slag or matte wastes generated by East Penn Manufacturing Co., Inc. in accordance with the proposed land disposal restrictions for D008 wastes. Mill Service, Inc. has no intention at this time to install thermal recovery units for wastes in the High Lead Subcategory. Mill Service, Inc. also does not expect to be able to treat slag-type materials to meet the proposed TCLP concentration for Low Lead Subcategory wastes.

If you have any further questions, please contact me.

Sincerely,

Carl F. Bender

Carl F. Bender, P.E.
Vice President - Engineering

CFB/mlb

RECEIVED
DEC [illegible] 1989
E.P.M.

Exhibit "D"

7-99

Lead and Zinc Wastes

ENVIROSAFE MANAGEMENT SERVICES, INC.

December 22, 1989

Mr. Danial G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Subject: Final Third Land Disposal Restrictions

Dear Mr. Dallicker,

In response to your letter dated December 15, 1989, Envirosafe Services, Inc., (EMI) is pleased to submit the following information. In the interest of brevity, the questions are not repeated. Please refer to a copy of your letter, which is attached for your convenience.

1. EMI will accept slag and matte waste with levels below the EP toxic level of 5.0 mg/l. Because it is EMI's interpretation that a waste of this type would not be hazardous, no special technology is required. The waste would be disposed of in our RCRA/CERCLA approved landfill.

2. EMI will have the capacity to accept 57 tons/week of the waste at our facility in Oregon, Ohio. We could begin taking this waste immediately and can assure capacity for a least two years due to construction of a new cell with at least 475,000 cubic yards of capacity. This cell, expected to come on line in February, 1990, is in addition to our operating cell which has expected life into mid 1990. Cost to East Penn for disposal of this waste would be $160/ton or cubic yard (taxes included, transportation not included).

3. EMI will not have the technology to treat waste above 5.0 mg/l EP toxic level by thermal recovery.

4. Because EMI will not have the technology to treat this waste, no capacity will exist.

5. EMI currently operates a state-of-the-art stabilization facility at it's Grand View, Idaho facility and is successfully treating "first and second" third wastes. However, without performing an actual treatability study on your waste, it is virtually impossible to determine with any accuracy, whether or not this waste can be stabilized to the required level of 0.51 mg/l. After receiving the analytical data, it appears that this waste may need to be crushed or milled a into a powder-like form prior to treatment. While this crushing technology is commercially available, as of this date EMI has no plans to have such equipment in place by May 8, 1990. If

P.O. Box 833, Valley Forge, Pennsylvania 19482-0833 • (215) 962-0800
Facsimile Machine (215) 962-0727

Exhibit "E"

Mr. Daniel G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Subject: Final Third Land Disposal Restrictions

the waste can be provided to ESI in the crushed form, treatment may be possible, but without actual treatability studies, no firm conclusion can be reached.

6. If the technology is available (i.e. the waste can be stabilized as discussed in No. 5 above), the capacity to do so will exist. The Idaho facility is capable of treating approximately 120-180 tons/day of waste, depending on waste types. The proposed stream of 96 tons/week is well within our current capacity. Additionally, the existing stabilization facility was designed with expansion capability to 240-260 tons/day. Therefore, if the treatibility study is successful, then both technology and capacity will exist at least until the year 2000. The Idaho facility is currently operating two RCRA/CERCLA approved cells with approved expansion plans for two additional cells.

   If the waste can be stabilized, it could be handled immediately at our Idaho facility. The approximate cost would be $180/ton for treatment and disposal (provided the waste is received in it's crushed/powder form). Transportation by rail car from your rail siding, assuming one exists, to the Idaho facility is expected to be approximately $100/ton (loading not included). Total cost for transportation, treatment and disposal is $280/ton.

While ESI has attempted to answer these questions to the best of our ability, please recognize our business is one of constant and rapid change. Under no circumstances shall the contents of this letter be construed as a binding agreement between ESI and East Penn Manufacturing. All information provided herein is for informational purposes only and is subject to changes. All pricing can be considered negotiable.

Thank you for the opportunity to respond to your request. We look forward to working with you in the future to meet your hazardous waste management needs.

Mr. Daniel G. Dallicker
Senior Project Engineer
East Penn Manufacturing Co., Inc.
Lyon Station, PA 19536

Page 3

Subject: Final Third Land Disposal Restrictions

If you have any questions or require additional information, please contact me at (215) 670-8990 or (215) 962-0800.

Sincerely,

Jon H. Gerhart
Regional Sales Representative

cc: T. Karchinski
R. Pastor
R. Ellen

JHG:tmm

Chemical Waste Management, Inc.
3001 Butterfield Road
Oak Brook, Illinois 60521
708/218-1500

Lead and Zinc Wastes

December 28, 1989

Mr. Dan Dellicker
East Penn Mfg.
Deka Road
Lyon Station, PA 19536

Dear Mr. Dellicker:

This letter is in response to your inquiry regarding Chemical Waste Management's (CWM) ability to meet the proposed lead standards of the May 8, 1990 Land Ban regulations.

CWM has the technology available to stabilize wastes containing less than, equal to and even greater than 2.5% lead to the treatment standard of 0.512 ppm based on the TCLP test.

We also have the capacity to treat via stabilization the lead wastes your company generates. CWM will be ready on May 8, 1990 to stabilize your material to the BDAT levels.

Current pricing for stabilization and subsequent landfilling varies by CWM site but the following prices can be used as a general guide:

Emelle, Alabama	-	$215/ton + taxes
Lake Charles, Louisiana	-	$220/ton + taxes
Model City, New York	-	$260/ton + taxes

Our position on thermal recovery of lead wastes with over 2.5% lead is that this is technically difficult and economically infeasible. We plan on commenting to the EPA that they should change this 2.5% level to something that industry can live with and that all levels below those that can be technically and economically recovered, should be allowed to be stabilized to the 0.51 ppm level.

RECEIVED
JAN 0 2 [illegible]
E.P.M.

Exhibit "F"

We currently stabilize K061 waste (EAF Dust) to 0.24 ppm lead.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

Michael J. Skurauskis
Marketing Manager - Inorganics

MJS:db

Commenter: Battery Council International (BCI)

Comment:

B. Nonwastewaters

For nonwastewaters, EPA has proposed separate treatment standards for waste containing "low lead levels," lead concentration of up to 2.5 percent, and wastes containing "high lead levels," lead concentration in excess of 2.5 percent. 54 Fed. Reg. 48438. For low lead level wastes, EPA has proposed stabilization which results in leachable lead of 0.51 mg/l. For high lead level waste EPA proposed "thermal recovery as a method of treatment." Id. at 48439.

For the reasons stated above, EPA must properly adopt the characteristic level as the treatment standard for D008 nonwastewaters. In addition, there are practical reasons why the standards EPA proposed would be inappropriate.

For low lead level wastes (any waste containing a concentration of less than 2.5 percent lead), EPA has proposed that the waste be stabilized so that the resulting mixture meets a standard of 0.51 mg/l leachable lead based on the TCLP method of measurement (rather than the EP). Stabilization involves mixing the waste with fly/ash mixtures, cement, concrete mixtures or other formulations. This mixing causes the volume of materials being handled to increase substantially. Indeed, in some cases, the volumetric increase is as much as 100 percent. Thus, the proposed treatment standard generates more waste than the original amount that must be disposed of. BCI submits that this approach is completely out-of-step with the waste reduction goals set out elsewhere in the proposed rule and emphasized in recently introduced legislation.

Furthermore, data submitted by the Secondary Lead Smelters Association, Inc. ("SLSA") demonstrates that the proposed treatment standard for low lead level wastes--stabilization achieving 0.51 mg/l on the basis of TCLP -- is not attainable. See Letter to RCRA Docket (OS-305) from Robert N. Steinwurtzel dated December 22, 1989. The record thus not only does not support EPA's proposal, it rebuffs it.

For high lead level wastes (wastes having a lead concentration of 2.5 percent or more) EPA has proposed thermal recovery as the treatment method. While in a vacuum this may make sense, EPA has not undertaken any analysis of whether adequate capacity exists to handle the influx of materials that will be directed to thermal recovery facilities (i.e., secondary

Docket Number: LD12-00178 (continued)

Commenter: Battery Council International (BCI)

Comment: (continued)

smelters) as a result of this rulemaking. BCI submits that adequate capacity may not exist for these purposes.

Finally, BCI supports SLSA's comments which indicate that no distinction should be drawn between low and high concentration lead wastes. Rather, affected facilities should have the flexibility to determine what materials are processed for recovery. Materials to be disposed of otherwise should be treated to a level corresponding to the characteristic level for D008 waste.

Commenter: Lubrizol Corporation

Comment:

IV. EPA's Proposed Treatment Standard For "High Lead" D008 Wastes Is Not Available For All Such Wastes And A Stabilization Standard Should Replace EPA's Proposed Treatment Standard.

As part of its operations, Lubrizol generates a D008 waste which contains more than 2.5% lead. For this "high lead" waste, EPA has proposed to promulgate a treatment standard of "Thermal Recovery as a Method of Treatment." Lubrizol is concerned that EPA has proposed this treatment method without taking into account (i) the various unique forms of D008 waste potentially subject to the treatment requirement and (ii) the availability of thermal recovery facilities for such a variety of wastes. In the preamble, EPA states as the sole basis for this proposed standard "data available to the Agency [which] indicates that lead can be recovered from electric arc furnace dust (K061) by high temperature metals recovery." 54 Fed. Reg. at 48439. It is unreasonable to use data concerning a single type of waste as the basis for a required BDAT methodology potentially applicable to a large number of different types of waste. This is readily apparent with respect to Lubrizol's D008 wastes. Lubrizol is not aware of any currently available thermal recovery facility which could treat its lead-containing waste as would be required under the proposed rule. Moreover, Lubrizol has no information which would indicate that thermal recovery technology can be used on the type of "high lead" D008 waste it generates.

EPA has already recognized the benefit of stabilization as it relates to metal-containing wastes. Lubrizol believes that a stabilization-based treatment standard

Commenter: GNB, Inc.

Comment:

Comment 2: Cutoff Concentration for High-Lead/Low-Lead Subcategories

EPA has solicited comments on the definition of high-lead/low-lead D008 nonwastewaters based on a 2.5 percent concentration cutoff. While GNB believes that recycling D008 wastes to reclaim the lead is the most appropriate method for handling most lead-bearing materials, GNB suggests eliminating the distinction between high-lead and low-lead D008 wastes for the following two reasons:

1. Secondary lead smelters in the U.S. are currently operating at or near in capacity processing lead recovered from spent lead-acid batteries and other "indigenous" lead-bearing materials. "Thermal recovery" capacity simply does not exist to reclaim the lead from all non-indigenous D008 wastes having a total lead concentration above 2.5 percent, nor will it exist by May 8, 1990.

Docket Number: LD12-00202 (continued)

Commenter: GNB, Inc.

Comment: (continued)

2. The characteristics of the universe of D008 wastes vary significantly from source to source. Because of the complex technology required to produce a high quality end product from a secondary lead facility, the facility must be very selective in the types of materials accepted for reclamation. This prevents the acceptance of various D008 wastes. Certain constituents in such wastes would require further refining techniques which are not currently employed at secondary lead reclamation facilities. Other constituents might interfere with the integrity and quality of the slag generated. Additionally, most operating permits restrict the types of waste that may be accepted. Reports of sham recycling allegations, moreover, have made most secondary lead operators very wary of accepting materials that are not economically recyclable.

As landfill capacity dwindles (due to environmental pressures), the cost of treating D008 wastes to an accepted standard and the payment of increasingly higher disposal costs will encourage generators of D008 wastes to seek alternate solutions such as "thermal recovery." EPA should allow market conditions to dictate the choice between treatment to an

Docket Number: LD12-00202 (continued)

Commenter: GNB, Inc.

Comment: (continued)

acceptable standard followed by land disposal or use of "thermal recovery" techniques. This would provide both the necessary time and the entrepreneurial incentive for developing the technology and capacity for economically recovering the lead from more and more D008 wastes, either through "thermal recovery" or newly emerging technologies.

III. TREATMENT STANDARDS FOR HIGH LEAD SUBCATEGORY

The Electric Utilities are troubled by the limitations under EPA's proposed treatment standard for the D008 (lead containing waste) high lead subcategory. Specifically, the Agency is proposing that wastes in the high lead subcategory (i.e., those wastes containing greater than or equal to 2.5% lead), be subjected to a required treatment method of "thermal recovery as a method of treatment." See 54 Fed. Reg. at 48438-39. This treatment option, however, is impractical for certain lead wastestreams containing constituents that cannot be subjected to thermal recovery. One example is contaminated soil and debris containing PCBs and lead. Depending on the concentration of PCBs in the waste matrix, thermal recovery may be prohibited under regulations promulgated under the Toxic Substances Control Act restricting the combustion of PCB wastes. See 40 C.F.R. § 761.60. Similarly, in the case of mixed waste (combinations of hazardous waste and low level radioactive waste), subjecting the radioactive component of the mixture to a mandatory thermal recovery treatment standard may be in violation of requirements under the Atomic Energy Act prohibiting or restricting the incineration of radioactive materials. See section VII, infra.

Accordingly, the Electric Utilities urge EPA to rethink its proposed treatment methods for the high lead subcategory to take into account waste mixtures that are not amendable to this treatment method. At a minimum, EPA should grant such wastes a two-year capacity variance as it has done for mixed wastes and other contaminated soils containing restricted wast

Docket Number: LD12-00213

Commenter: Vision-Ease

Comment:

COMMENTS

1) According to the proposed rules, since our waste glass is a characteristic waste for lead (Exhibits > 5.0 mg./L. EP leach results), and it contains greater than 2.5% lead, we will be required to send our waste glass solids through a thermal recovery process.

We have looked at recycle/beneficial uses for our waste glass in the past, but are very concerned about legitimate recycling processes and taking on added liabilities by improper handling of our waste by an outside company.

We have not done capacity studies for thermal recovery of our waste at this point, and do not know if there is a company that can handle our volume of waste. (400 to 500 Tons/year)

We have always handled our wastes responsibly; and are very willing to investigate thermal recovery of our waste, if that process will be beneficial to the environment. However, it is very unlikely that we will be able to seek out, run tests, and set up a for an outside company to thermally recover our glass solids before the May 8, 1990 deadline.

As a result, if we will be required to place our waste into a thermal recovery process, **we request that we be given enough time to adequately make arrangements with an outside company to handle our waste.**

Failure to allow us this time, would result in a huge amount (8 to 10 tons per week) of glass solids that would have to be stored until they could be processed or shutdown of our factory.

Docket Number: LD12-00222 (continued)

Commenter: American Foundrymen's Society, Inc.

Comment: (continued)

E G Granmann
Aluminum Casting & Engineering Co
REGION 5
T W Davis
Grede Foundries Inc
Midwest Div Wichita Foundry
DIRECTORS
D C Branch
Fahramet Division Industrin
C A Buer
Ford Motor Co Cleveland Casting Plant
A S Davis
Consultant
J A Dunn
Ashland Chemical Co
D W Giles
Avis Metalcasters Service Ltd
T M Hartman
Pennsylvania Steel Foundry & Machine Co
R L Howell
Omaha Steel Castings Co
R Landsaroner
Midwest Foundry Co The Marmon Group
R B McClelland
McClelland & Co
W M O'Neal
Alloy Engineering & Casting Co
J D Pearson
Aurora Industries Inc
J R Ponitch
Lester B Knight & Associates Inc

On behalf of its membership which includes ferrous foundries, nonferrous foundries, ingot manufacturers and other suppliers to the foundry industry located throughout the United States, the American Foundrymen's Society provides the following comments on the subject proposal.[1]

1. The proposed treatment standards for D006 (cadmium) and D008 (lead) are based on wastes which are dissimilar to those generated by foundries and should not be applied to foundry wastes.

2. Treatment standards for wastes generated by foundries should be set at the characteristic level. By EPA's own estimate, there is no significant reduction of risk to human health at the proposed levels when compared to the risk at the characteristic level.

3. The economic impact on foundries of the subject proposal has been drastically underestimated.

4. A national capacity variance for wastes generated by foundries should be granted.

4. National Variance For Foundry Wastes

For the reasons stated above, we request a two-year capacity variance for waste generated by foundries. In this regard, with respect to the foundries' suppliers, we incorporate by reference the capacity variance and all other arguments which are being submitted by the Institute of Scrap Recycling Industries, Inc. To summarize, the volume of waste material generated by foundries has been severely understated. And the proposed treatment methods have not been shown to be consistently effective when applied to foundry wastes.

umber: LD12-00262

ter: Owens-Illinois

DOCKET NUMBER F-89-LD12-FFFF
COMMENTS ON LAND DISPOSAL RESTRICTIONS
FOR THIRD SCHEDULED WASTES

ns-Illinois is submitting these comments on the proposed land posal restriction for the third-third scheduled wastes. Our nts will be primarily directed at the proposed standards for D007, and D008 wastes.

roposing this rule the EPA is attempting to meet the rements of HSWA by setting levels or methods of treatment n substantially diminish the toxicity of the wastes. In ition, under various sections of 40CFR260-262 and on the rm Hazardous Waste Manifest, generators of hazardous waste have a program in place to reduce the volume and toxicity of waste generated. The proposed land ban rule and the existing rements for generators to reduce volume and toxicity of dous wastes are complementary approaches. However under R264, once a generator who is regulated under 40CFR260-262, mpts to treat their waste, 40CFR264 is triggered and now the ator becomes a hazardous waste treatment and/or storage ity and subject to a substantial set of additional lations under 40CFR264 which are costly and time consuming to ent. The merits of 40CFR264 for regulating large and/or cial hazardous waste TSD facilities is well recognized. ver, in view of the land ban restrictions already in place he additional proposed land ban regulations, both of which y minimum pretreatment standards for a large list of s, the EPA should consider providing relief from the nsive permitting, closure and financial responsibility ements under 40CFR264, to generators who can treat their on site to reduce toxicity and/or volume, This would ide generators with an incentive to develop on-site logies to reduce the volume and toxicity of their wastes d in the overall implementation of the land ban provisions RA and the intent of Congress.

Commenter: Owens-Illinois

Comment:

Secondly, the BDAT and treatment standards for D006, D007 and D008 wastes have been developed from data applicable to only one set of conditions which generates this type of waste, i.e. electric arc furnace dust (K061), pickle liquor sludge (K0672) and electro plating sludge (F006) respectively. The application of BDAT and treatment standards based on specific waste streams, K061, K062 and F006, and then applied to the extremely large universe of varying types of wastes which exhibit D006, D007 and D008 characteristics is inappropriate. The EPA has not shown that the BDAT is applicable or that sufficient nationwide capacity exists for the universe of D006, D007 and D008 wastes to either apply BDAT to treat these wastes or that the treatment levels are achievable. The transfer of treatment standards from other listed wastes to the characteristic wastes in general should be reviewed again and an interim national capacity variance be issued for characteristic wastes until BDAT and performance standards are demonstrated for characteristic wastes.

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

25% lead. This will ensure adequate metals recovery capacity for the greater than 25% lead waste truly amenable to recovery, and adequate stabilization capacity will exist for the low lead category (<2.5% lead). EPA could even set the threshold at 50% lead, as chemical precipitation and stabilization is effective on waste at these concentrations. Sufficient capacity exists to meet the May 8, 1990 deadline. The capacity information published by EPA in the Federal Register supports this. The combined required capacity for both treatment and recovery of lead waste is 73 million gallons per year (see 54 FR48473). Even if all of this lead waste goes to stabilization (i.e., no recovery was required even above 25% Pb), an excess capacity of 479-134.5 or 344.5 million gallons/year is available to manage this waste (54 FR48475). No data was offered by any commenter to challenge the accuracy of this data. EPA is therefore correct in stating adequate stabilization capacity exists for less than 25% lead.

3. Comments of the University of Illinois
(Docket #LD12-00139)

The waste stream identified as 50% lead in sand from a firing range may have presented difficulty disposing of by recycling, since the sand may have caused a recovery furnace difficulty due to the high silica content.

The waste is amenable to stabilization, and this would negate a capacity variance. As a worst case, a treatability variance may be warranted.

4. Comments of Olin Chemicals (Docket #LD12-00129) and of Exide Corporation (Docket #LD12-00117)

The HWTC concurs with Olin Corporation that all high level lead wastes may not be amenable to thermal recovery. This is not a capacity issue, however, but one of treatability. These wastes, although not amenable to thermal recovery, could be stabilized, although an alternate treatment standard might be required for stabilization of waste in excess of 50% lead. EPA should not grant a capacity variance for these wastes as adequate stabilization capacity exists currently for these wastes. Landfilling of a stabilized high lead subcategory waste is more protective of the environment than the continued land disposal of untreated high lead waste. It makes little sense to restrict low lead waste from land disposal on May 8th, while the more concentrated and toxic high lead waste continues to be land disposed after May 8th.

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

The limitations of thermal recovery should be dealt with by specifying a separate stabilization treatability group for high lead waste (50% lead). In all cases treatment of these wastes to a range of 2.2 to 3.8 PPM is achievable as shown by the data provided by our members as well as SLSA for the high lead subcategory.

Contrary to Exide Corporation comments, there is no reason to grant a capacity variance for the high lead subcategory. Instead of mandating recovery, EPA should raise the recovery threshold to up to 50% lead, and allow for stabilization. Chemical treatment and stabilization can achieve the proposed treatment standards for high lead waste. In this way the shut down of secondary lead smelters, alluded to by Exide will not occur.

5. Comments of the American Foundrymen's Society (Docket #LD12-00042)

The comments of this organization suggests that EPA has underestimated capacity required for other EP toxic materials generated by foundries and ingot manufacturers. They highlight an additional 128,406 tons/year of EP toxic dust and sludges from iron and steel foundries, and 189,263 tons/year of EP toxic sands from brass and bronze foundries (see attachment 2 of their comments), for a total of 317,669 tons/year of lead waste they claim EPA has underestimated.

Based on stabilization of these wastes, more than adequate capacity exist. As noted in Section F-2above, EPA has shown that 344.5 million gallons/year available capacity exist for stabilization. Assuming a density of 10 lbs/gal. this equates to approximately 1.7 million tons/year of available capacity. The additional 0.317 million tons/year required capacity that the Foundrymen's Society claims EPA underestimated is therefore not a problem.

Finally, the effects of the TCLP test on required capacity is insignificant. The TCLP test is less aggressive, not more aggressive than the EP procedure, since the solution is buffered during the extraction. This is not a valid reason to grant a capacity variance for lead wastes.

6. Comments of Ciba Geigy (Docket #LD12-00136)

Ciba Geigy also presents arguments in favor of raising the recovery threshold above the current level of 2.5 percent. Ciba Geigy generates a wastewater sludge from manufacture of glass enamels. These wastes exceed 2.5%

7.4 INADEQUATE CAPACITY FOR LEAD NONWASTEWATER TREATMENT

Summary:

Three commenters (The Aluminum Recycling Association (ARA; 97), University of Illinois (139), and General Motors Corporation (GM; 143)) suggested that adequate capacity does not exist for the treatment of lead nonwastewaters. Two commenters (GM (143) and The University of Illinois (139)) argued that there is inadequate treatment capacity for D008 nonwastewaters. GM questioned the willingness of recovery plants to handle wastes with concentrations as low as 5 percent. The University of Illinois asserted that disposal of lead lab packs is difficult for small quantity generators like themselves because their volumes are insufficient to interest treatment facilities. The University of Illinois doubted that any capacity exists for nonwastewater lead waste, since it had been unable to find a site to accept the material.

ARA (97) asserted that the transfer of treatment methodology from the electroplating and steel industries to aluminum recyclers is inappropriate, and that as a result treatment capacity does not exist for the recyclers' lead-contaminated baghouse dust. ARA stated that the proposed standards for lead nonwastewaters are very unlikely to be achieved within secondary aluminum plants, and that this commenter does not know of any off-site treatment capacity for recyclers' baghouse dust. In a joint project with the Department of Energy, the commenter has been exploring new treatment technologies for aluminum furnace and incineration-related baghouse dust wastes; ARA argued that these activities reflect the fact that appropriate treatment capacities do not exist and will require time to develop.

ARA (97) considered the 10,000 tons/year of baghouse dust from secondary aluminum smelting operations a small amount when compared to the steel and chemical industries. The commenter asserted that the baghouse dust is not a listed hazardous waste as defined in 40 CFR 261.31 and 261.32. ARA (97) asserted, however, that if aluminum recyclers can no longer operate with baghouses that collect lead materials because of the proposed landfill regulations, they would be forced to shut down.

Response:

Since both stabilization and metals recovery are acceptable treatment standards for lead, EPA disagrees that there is inadequate capacity for treating lead nonwastewaters. EPA's capacity analysis indicates that 479 million gallons/year of stabilization treatment capacity and 37 million gallons/year of secondary smelting treatment capacity are available for D008 nonwastewaters.

The commenters did not provide data supporting their claim that inadequate treatment capacity exists. The commenters' chief concern appears to be the proposed 2.5 percent recycling cutoff, which EPA is not adopting. Consequently, EPA did not revise the capacity analysis based on these comments. EPA's capacity analysis is based on national estimates and evaluates the availability of national commercial capacity to handle the national volume of wastes requiring treatment. EPA assumes that facilities will accept wastes that they are permitted to treat; the willingness of facilities to accept wastes is not considered as part of the capacity analysis. If the commenter believes that their waste differs significantly from the waste used to set the treatment standard, they may consider applying for a treatability variance.

Comments:

The comments relevant to the inadequate capacity for lead nonwastewater treatment are presented in the following order:

- The Aluminum Recycling Association (ARA; 97: pp. 1, 4-5);
- The University of Illinois (139: p. 1); and
- General Motors Corporation (GM; 143: p. 5).

Commenter: Aluminum Recycling Association (ARA)

Comment:

ARA believes that the proposed regulations with respect to lead, cadmium, and chromium are overly restrictive and unnecessarily burdensome to secondary aluminum producers. ARA further believes that current treatment standards for these metals are adequate from an environmental standpoint and should be maintained. Most critically, their operations in no way approximate the processes of other industries, including the electroplating and steel industries, upon which the EPA has indicated it has relied for experience in nominating lead, cadmium, and chromium landfill criteria. Consequently, appropriate treatment capacity for the furnace and incineration-related baghouse dust does not exist either within or external to this industry's plant facilities. Moreover, secondary aluminum furnace and incineration-related baghouse dust is non-migratory in nature once at the landfill for as long as the waste remains hazardous.

-4-

II. Unavailability of Treatment Capacity

- Because of the difficulties in treating secondary aluminum furnace and incineration-related baghouse waste, the proposed stricter standards are unlikely, if not impossible, to be achieved within secondary aluminum plants;
- No external treatment capacity at present is known with the capability of reducing the elements of EPA concern in secondary aluminum furnace and incineration-related baghouse dust to the levels proposed;
- The ARA has been exploring a joint project with the Department of Energy, Office of Industrial Programs, to develop new technologies to treat secondary aluminum furnace and incineration-related baghouse dust wastes; these activities reflect the fact that such treatment capacities do not currently exist and will require a reasonable length of time to be made practicable.

Commenter: Aluminum Recycling Association (ARA)

Comment:

- The quantity of furnace and incineration-related baghouse dust from secondary aluminum smelting operations is very small when compared to listed regulated hazardous waste from other industries. An estimate of the entire secondary aluminum industry is only 10,000

tons per year. This is insignificant when compared to such industries as the steel or chemical industries. In addition, secondary aluminum smelting furnace and incineration-related baghouse dust is not a listed hazardous waste as defined in 40 CFR 261.31 and 261.32.

IV. Criticality of the Secondary Aluminum Industry to the Automotive Sectors and to the Environment

- The proposed standards, if adopted, will seriously curtail the secondary aluminum industry's activities as a major contributor to the nation's economic and environmental well-being.

  Secondary aluminum smelters, in order to comply with EPA regulations, operate with baghouses that collect materials containing lead, cadmium, and chromium. If these companies can no longer operate with baghouses because of the new proposed landfill regulations, then on several environmental counts they would be forced to shut down;

Docket Number: LD12-00139

Commenter: University of Illinois at Urbana-Champaign

Comment:

Capacity Determinations for Lead and Mercury Wastes (III.B.1.c.)

Last year, the University disposed of only two types of hazardous wastes by direct landfill. These were lead (D008) and mercury (D009) characteristic wastes. The lead waste was contaminated sand from a firing range. Samples of the sand showed that the lead level was 50%. The waste was placed into 40 55-gallon drums while we tried to find a site willing to accept the material. We called a number of companies that were reported to recycle lead wastes, but none were interested in the waste we had. As a last resort, the waste was sent to a landfill. Based on this experience, I question whether there is any capacity for nonwastewater lead wastes.

Next to dioxin wastes, mercury wastes have proven to be the most difficult wastes to dispose over the past two years. Last year the University disposed of 7 drums of mercury contaminated debris, material that came primarily from the cleanup of mercury spills. Thermometers, mercury switches, and mercury relays have also proven to be difficult to impossible to dispose of at any price. Again, I would question whether any capacity exists for disposal of nonwastewater mercury wastes.

Finding disposal sites for laboratory quantities (lab packs) of lead, mercury, and other non-incinerable hazardous wastes, is not easy. Many small quantity generators are unable to find sites willing to take their wastes because their volumes are too small to interest contractors.

Docket Number: LD12-00143

Commenter: General Motors Corporation

Comment:

Proposed Treatment Standards for Lead Nonwastewaters

It is also stated on page 48438 that: "The Agency has data that indicate that wastes containing concentrations of lead as low as 5 percent can be recovered." It is further stated that: "This 5 percent level correlates well with the proposed cut-off level of 2.5 percent based on the performance of stabilization." We fail to understand why a 5 percent level correlates with a 2.5 percent level (i.e., half as much). Also, it is GM's understanding that lead cannot be recovered economically from a nonwastewater with a total content of 5 percent lead. Further, we question whether EPA has considered the capacity or the willingness of recovery plants to handle wastes with such low lead concentrations. At some price level, such recovery will not be feasible.

7.5 Capacity Variance Requests for Spent Batteries and Battery Parts Used as Lead Feedstocks in Secondary Smelters

Summary:

Four commenters (Schuylkill Metals Corporation (82), Secondary Lead Smelting Association, Inc. (SLSA; 161), RSR Corporation (162), and Battery Council International (BCI; 178)) contended that land disposal restrictions should not apply to lead-bearing materials (such as battery parts and spent batteries) stored prior to recycling or resmelting. SLSA and RSR, supported by BCI, pointed out that maintaining lead-bearing materials in staging piles, which would no longer be permitted, is a common industry practice and that sufficient capacity to store these materials in tanks, as would be required under the proposed rule, does not exist. The commenters maintained that imposition of the LDRs would impede the recycling of lead batteries.

The commenters asserted that the staging piles are storage for raw materials, not hazardous waste disposal. Schuylkill Metals (82) stated that the use of such staging piles makes lead secondary smelting economically feasible, and that similar staging piles at primary smelters are not subject to RCRA regulations. Schuylkill also stated that the proposed regulations should be changed to exempt from RCRA regulation the inventory of battery components and spent batteries that secondary smelters place in staging piles.

RSR (162) contended that RCRA regulations do not apply to staging piles at secondary smelters, and presented an analysis to demonstrate that such furnace feed materials are not solid waste. As a matter of law, RSR stated, applying the land disposal restrictions to furnace feed materials is wrong. RSR pointed out that EPA has another option: to authorize a generic "no migration" variance for secondary smelters, since this temporary hazardous waste storage is a type of "...indoor waste pile, where engineered containment systems are effective over the period the waste remains in storage." RSR also asserted that the definition of "tank" includes the structures in which most staging piles are housed, and a capacity variance could be granted to allow adequate construction time for those secondary smelters that require the proper housing.

The commenters requested a national capacity variance since there will not be enough capacity to store these lead-bearing materials in the event EPA does consider such staging piles subject to land disposal restrictions.

Response:

In the proposed rule, EPA solicited comments on the management of other D008 lead material at secondary smelters. Because several commenters indicated that requiring their lead staging piles to meet land disposal restrictions would impede their lead recycling efforts, EPA contacted several secondary smelters to determine the capacity impact of the LDRs on lead staging piles. These contacts indicated that the continued storage operations at smelting facilities with large volumes of battery parts remains in question. Therefore, EPA is granting a two-year national capacity variance to allow storage of the batteries preceding smelting. This variance will allow EPA to determine if the present storage method of some secondary lead smelters - 3-sided tank-like devices on concrete inside buildings - is in fact "land disposal" under section 3004(k).

Comments:

The comments relevant to a capacity variance requests for staging piles are presented in the following order:

- Schuylkill Metals Corporation (82: pp. 1-2)
- Secondary lead Smelting Association, Inc. (SLSA; 161: pp. 12,15-16, Appendix C);
- RSR Corporation (162: pp. 16-27); and
- Battery Council International (BCI; 178: p. 13).

STORAGE

Schuylkill Metals places lead-acid battery components (lugs and plates with oxide) in piles. These piles are on impermeable concrete and under roof to prevent run-on. Any run-off is collected and treated in our waste water treatment facilites. The only purpose of these piles is raw material inventory which provides a day-to-day, uniform quantity of feed to our smelting furnaces and refining processes. This inventory is necessary since the availability of the raw material supply (spent lead-acid storage batteries) is not uniform but varies significantly based on seasonal, climatic, regulatory, and market conditions. Schuylkill maintains up to 90 days (approximately 16,000 tons) of this raw material inventory. Without this inventory, the smelting furnaces and subsequent processing (refining) operations cannot be operated efficiently and economically.

Additional, Schuylkill could not service its customers and remain in business over the long term without this inventory.

Schuylkill believes that Congress did not intend these inventory piles to be within the scope of RCRA Sections 3004 (j) and (k).

To the contrary, the intent of these sections was to eliminate long term storage from circumventing land ban treatment requirements and to eliminate storage in waste piles as surrogate disposal. Schuylkill inventory piles of battery components cannot be construed as disposal either real or surrogate in any interpretation since the battery components are being reclaimed and not discarded. Schuylkill further believes that the intent of Congress in exempting storage in tanks and containers only for the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal did not include Schuylkill's battery components inventory piles, as these piles are not for disposal. Placing Schuylkill inventory into tanks or containers would be economically prohibitive and would not improve any environmental or employee health risks. In fact, these risks are already minimized such that the U.S. EPA has issued a Guidance Document for Secondary Lead Smelter variances to exempt these piles from being classified as solid waste. The summary of this document which is attached to these comments states:

> "Disposal of spent lead-acid batteries is becoming a serious national problem. One means to increase battery recycling rates is to exclude plate and group storage piles at those secondary lead smelter facilities that meet the Section 260.31 (c) criteria from classification as solid waste. If a secondary lead smelter facility stores and handles it plates and groups in a manner that minimizes losses and otherwise runs a sound operation, OSW would deem it appropriate and certainly consistent with national policy for the Regional Administrator to grant the solid waste variance."

Docket Number: LD12-00082 (continued)

Commenter: Schuylkill Metals Corporation

Comment: (continued)

Our market competitors, the primary smelters, inventory of raw material is in piles, some under roof on concrete and some outside on soil. These piles are exempt from RCRA Regulations.

Schuylkill believes the proposed regulations should be changed to exempt battery components and spent batteries placed in piles for the sole purpose of inventory for secondary lead smelters, from the RCRA Regulations.

Docket Number: LD12-00161

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment:

In addition, the SLSA supports EPA's interpretation that spent batteries stored prior to recycling are considered containers for regulatory purposes and that the storage of these materials for up to one year is not prohibited by the land disposal restrictions. This interpretation is based on a regulatory provision that specifically states that batteries are considered containers for regulatory purposes. 40 C.F.R. §264.314(d)(3). Any amendment of this regulatory provision would require the commencement of a formal rulemaking proceeding.

Storage of batteries prior to recycling is necessary to ensure proper recovery of lead from spent batteries. Because no other feasible storage alternative that would be consistent with the proposed land disposal restrictions exists, the SLSA supports the Agency's characterization of spent batteries as containers for regulatory purposes. A more detailed discussion of the applicability of the proposed land disposal restrictions to spent lead acid batteries and other lead bearing materials is included in the attached correspondence that the SLSA submitted to EPA. See Appendix C.

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment:

2. National Capacity Variance

In the preamble to the proposed land disposal restrictions, EPA specifically requested comments on the need for a national capacity variance for the storage of lead-bearing materials prior to recycling. 54 Fed. Reg. at 48481. As discussed above, the SLSA contends that the land disposal restrictions should not apply to lead-bearing materials stored prior to recycling. In the alternative, however, if the land disposal restrictions do apply, then a national capacity variance for the storage of these materials is necessary and appropriate for the lead recycling industry.

In the event that the proposed land disposal restrictions do apply to the storage of lead-bearing materials prior to recycling,[*] EPA would require the lead recycling industry to store these materials in tanks or containers. 40 C.F.R.§268.50. Currently, sufficient capacity to store these raw materials in tanks prior to recycling is not available and such capacity will not be available by May 8, 1990. Furthermore, because EPA intends to propose an amended definition of tank for regulatory purposes in the near future, lead recycling facilities should not be required to install tanks for the storage of lead-bearing materials prior to recycling until the regulatory definition of tanks is finalized. Otherwise, lead recycling facilities may be required to construct a tank that complies with the current regulatory requirements now and then have to retrofit the tank or construct a new tank that complies with the new regulatory requirements sometime in the future. Such a result would impose an unnecessary and unreasonable burden on the lead recycling industry. Accordingly, the SLSA proposes that a national capacity variance for the storage of lead-bearing materials prior to recycling be granted for the lead recycling industry until sufficient capacity becomes available.

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[*] As noted herein, the SLSA maintains that to subject its raw material piles to the land disposal restictions represents an illogical and improper construction of Congressional intent.

Consistent with the goals and objectives of RCRA, the SLSA urges EPA to continue its efforts to encourage the recovery of lead resources from spent batteries and other lead-bearing materials. Accordingly, the SLSA contends that EPA should recognize that the land disposal restrictions do not apply to the storage of lead-bearing materials prior to recycling. Alternatively, EPA should grant a national capacity variance for the storage of these materials prior to recycling at lead recycling facilities to enable the industry to develop sufficient capacity that meets the applicable regulatory requirements.

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September 18, 1989

HAND-DELIVERED

Mr. Robert Scarberry
Chief, Land Disposal Branch (WH-562B)
Environmental Protection Agency
Room SE248
401 M Street, S.W.
Washington, D.C. 20460

Re: Storage of Lead-Acid Batteries and Other Lead-Bearing Materials

Dear Mr. Scarberry:

As we discussed over the telephone on August 9, 1989, it is our understanding that in preparing the draft Notice of Proposed Rulemaking for the land disposal restrictions for the final-third of hazardous waste, your office has been considering the impact of these restrictions on the lead recycling industry. Specifically, you indicated that all waste materials that exhibit a characteristic of hazardous waste, such as D008 waste, would be subject to the land disposal restrictions based on EPA's understanding of the Hazardous and Solid Waste Amendments of 1984 ("HSWA"). Accordingly, under the Agency's interpretation of the statutory definition of "land disposal," the storage of spent lead-acid batteries, lead plates and groups, and other lead-bearing materials prior to processing at lead recycling facilities could be subject to the land disposal prohibitions. Thus, your office is seeking information regarding the handling practices employed by lead recycling facilities with respect to spent batteries and other lead-bearing materials.

In response to your request, we have requested the members of the Secondary Lead Smelters Association, Inc. ("SLSA") to provide information regarding their handling practices for spent lead-acid batteries, lead plates and groups, and other lead-bearing materials. Based on the information that we received from the SLSA member companies, we have prepared this response.

I. INTRODUCTION

As you may know, the SLSA is a national, non-profit trade association that represents the lead recycling industry in technical, legislative, and regulatory environmental matters. Through recycling efforts, the SLSA members represent approximately 80 percent of the lead recycling capacity in the United States. In producing lead, the SLSA members rely primarily on the estimated 80 million spent lead-acid batteries that are generated each year for their raw materials.

If the Agency's technical interpretation of the land disposal restrictions (i.e., prohibition against the storage of spent batteries and other lead-bearing materials prior to processing at lead recycling facilities) is enforced against the lead recycling industry, virtually all lead recycling facilities will be forced to shut down or significantly reduce their production, thereby reducing the domestic capacity to recover lead from spent lead-acid batteries. This contraction would result in the improper disposal of millions of spent lead-acid batteries, which would pose serious environmental problems nationwide. Such a result would be contrary to the primary objectives of the land disposal restrictions (i.e., eliminate the improper and environmentally unsound land disposal of hazardous waste and to promote alternative waste management practices such as materials recovery).

II. DISCUSSION

A. Storage of Spent Batteries

All of the sixteen facilities for which we received information process spent lead-acid batteries directly off the trucks as they are delivered. Unfortunately, spent batteries cannot always be processed directly and, thus, generally must be stored at the facility prior to processing. Storage of spent batteries is necessary because a facility may receive more batteries on any given day than it can process. Given the fluctuation in the number of spent batteries that are received during the year, a surplus of spent batteries is often needed to ensure continuous recycling operations. In addition, spent batteries may accumulate at a facility during periods of maintenance and repair of processing equipment.

While each of the facilities requires storage of spent batteries prior to processing, the methods that are employed vary from plant-to-plant. Many facilities maintain the spent batteries on trailer beds until they are ready for processing. Although this method of "storage" does not require a permit, the number of batteries that can be handled in this way is generally limited by the number of trailers that are available and the length of time they are available. For those facilities that need additional storage capacity or that do not use trailers, the spent batteries are generally stored on concrete or asphalt pads inside buildings. While most of these facilities use wooden pallets and wraps for the individual piles of batteries in the storage area, such practices are not universal within the industry.

None of the facilities store spent batteries in tanks as that is infeasible from an operational perspective, unless a building or a walled storage area in a building is considered a tank. In fact, when storing spent lead-acid batteries, it is best to keep the batteries upright at all times to prevent the spilling and leaking of the acid. Accordingly, use of a tank to store spent batteries has no advantages over the use of an impermeable base with adequate drainage and secondary containment.

The period of storage of spent batteries varies for each facility ranging from a few days up to twelve months. Generally, spent batteries are stored for one to three months depending on the season (because batteries tend to lose their charge during periods of extreme heat and cold, the spent batteries generated during these periods often exceed the facilities' processing capacity). However, for those facilities undergoing renovations and upgrading of their equipment and processing areas, longer storage periods may be required.

B. Storage of Lead Plates and Groups

When spent batteries are processed, the battery cases are typically sawed, the sulfuric acid is drained, and the lead plates and groups are removed. These lead plates and groups are then placed in storage areas until they are introduced into the furnaces. All of the members responding to our information request indicated that the lead plates and groups are stored on concrete pads in buildings. Arguably, some of the buildings used to store the lead plates and groups could be considered tanks for regulatory purposes.

As you know, EPA issued a guidance to the EPA regional offices regarding the issuance of variances for the storage of lead plates and groups. The guidance indicated that if lead recycling facilities could demonstrate that lead plates and groups were managed in a way that would minimize losses into the environment, a variance could be issued to the facility and no storage permit would be necessary. Twelve of the sixteen facilities reported that they had submitted variance applications. Variances have been granted for five of these facilities, while the other seven applications are still pending. One facility that was initially denied a variance, submitted another application after the guidance was issued and is now awaiting the state's decision.

While some facilities have been issued variances for the storage of lead plates and groups, these variances are generally issued with conditions. Inspection and monitoring requirements are generally included in the variance conditions. The scope of the variance is also limited. For example, one variance is limited only to lead plates and groups that are recovered from spent batteries on site while lead plates and groups shipped to the facility by independent battery breaking facilities are fully regulated. Similarly, another variance is limited only to those lead plates and groups that go directly from the storage area to the furnaces, while lead plates and groups that are moved to another storage area prior to processing are not covered by the variance.

In addition to the specific limitations of the variances discussed above, these variances have a limited application generally. For example, the variance is limited to lead plates and groups, while other lead-bearing materials (e.g., drosses) that are used as raw materials and stored onsite prior to processing are not eligible. This is particularly counterintuitive because the potential environmental risks posed by these other materials, as well as the handling practices for the storage of these materials, are essentially the same as those for lead plates and groups. In addition, variances must be periodically renewed and can be revoked at any time and, therefore, can only be considered a temporary solution. Accordingly, the issuance of a variance for the storage of lead plates and groups is not, by itself, the solution to the possible land disposal prohibition against the storage of spent batteries, lead plates and groups, and other lead-bearing materials prior to processing at lead recycling facilities.

As with the storage of spent batteries, it is necessary for facilities to accumulate lead plates and groups in storage during periods when the customers' demand for lead is less than the number of spent batteries received. Because lead plates and groups are the primary raw material for lead recycling facilities, many facilities prefer to maintain a month supply of lead plates and groups in storage. Most facilities store lead plates and groups for three to six months before processing.

C. Storage of Other Lead-Bearing Materials

In addition to spent batteries and lead plates and groups, lead recycling facilities also store other lead-bearing materials such as battery and lead manufacturers' scrap (mud oxides, drosses, and off-specification plates and groups) and junk lead scrap prior to processing. These materials are generally stored up to ninety days in containers in materials storage areas. Although most of these materials should be exempt from regulation because they are "by-products" that are being reclaimed (40 C.F.R. §261.2(c)), state regulatory officials have begun to insist that manufacturers' scrap be handled as characteristically hazardous waste. Thus, these materials, if defined as hazardous waste for regulatory purposes, may be subject to the land disposal restrictions under the Agency's interpretation.

D. Applicability of Land Disposal Restrictions

Under the statutory definition, the placement of any hazardous waste into a landfill, surface impoundment, or waste pile is considered land disposal. 42 U.S.C. §6924(k). Furthermore, the storage of any hazardous waste subject to applicable land disposal restrictions is prohibited unless it is solely to facilitate the proper recovery, treatment, or disposal of such waste. 42 U.S.C. §6924(j).[1/] Because EPA contends that spent batteries, lead plates and groups, and other lead-bearing materials destined for recycling at lead recycling facilities are hazardous waste, and EPA is developing land disposal restrictions applicable to those "wastes," the storage of these materials prior to recycling would arguably be prohibited.

The proposed application of the land disposal restrictions to the storage of spent batteries, lead plates and groups, and other lead-bearing materials would be in conflict with the primary objectives of the land disposal provisions -- to eliminate the improper and environmentally unsound land disposal of hazardous waste and to promote alternative waste management practices such as materials recovery. H. Rep. No. 98-198, 98th Cong., 2d Sess. 30 (1984). Consistent with these primary

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[1/] In promulgating regulations for the storage of hazardous waste subject to the land disposal restrictions in order to facilitate the proper recovery of the waste, EPA narrowed this exemption to include only the storage of waste in tanks or containers. 40 C.F.R. §268.50.

objectives, the lead recycling industry recovers lead from spent lead-acid batteries and lead scrap that would otherwise be placed in landfills, abandoned along roadways, dumped in waterways, or improperly disposed. Rather than encouraging facilities to collect these materials and store them prior to recycling, the proposed application of the land disposal restrictions will only serve to frustrate the laudable objectives of the land disposal restrictions.

Although the legislative history of the HSWA does not specifically address this issue, it is difficult to imagine that Congress intended to discourage legitimate materials recovery operations. The placement of spent batteries, lead plates and groups, and other lead-bearing materials in storage areas at lead recycling facilities poses a relatively insignificant environmental risk compared to the alternative -- improper disposal in landfills, along roadways, in waterways, and in vacant lots.

In addition, the land disposal prohibition is intended to restrict the disposal practices for hazardous waste. Spent lead-acid batteries, lead plates and groups, and other lead-bearing materials stored at lead recycling facilities are neither discarded nor abandoned. On the contrary, these materials are the valuable raw materials from which lead is produced. Accordingly, these materials should not be regulated as hazardous waste because they do not meet the regulatory definition of solid waste. In fact, EPA has specifically recognized that spent lead-acid batteries are not subject to regulation when they are stored at some facilities. 40 C.F.R. §266.80(a). Furthermore, EPA also recognized that the storage of lead plates and groups at secondary lead recycling facilities may not require a permit when it issued its variance guidance. Finally, EPA has specifically recognized that lead-bearing materials such as drosses and other battery and lead manufacturers' scrap are by-products and are, therefore, exempt from the hazardous waste regulations. 50 Fed. Reg. 614, 625 (1985); 40 C.F.R. §261.2(c). Consequently, the land disposal restrictions should not apply to the storage of these materials prior to recycling, because they are exempt from the hazardous waste regulations in other contexts.

It is our understanding that even if spent batteries, lead plates and groups, and other lead-bearing materials destined for recycling are considered hazardous waste, they could be stored for up to one year to facilitate proper recovery, provided that they are stored in tanks or containers and are clearly labelled. 40 C.F.R. §268.50. Storage in tanks or containers would be feasible for only some of these materials. For example, manufacturers' scrap that is stored in containers until it is processed would clearly be exempt from the land disposal prohibitions. Similarly, the storage of lead plates and groups in bins inside buildings could be allowed, provided that these structures qualify as tanks for regulatory purposes. In contrast, the storage of spent lead-acid batteries in tanks or containers is neither a feasible alternative nor the most environmentally sound method of storage.

III. CONCLUSION

The proposed application of the land disposal prohibitions for the storage of spent batteries, lead plates and groups, and other lead-bearing materials would not only be inconsistent with the primary objectives of the land disposal ban provisions, but would also have a devastating impact on the lead recycling industry. Given the fluctuations in the supply of raw materials and the nature of the lead recycling process, facilities must store spent batteries and other lead-bearing raw materials for significant periods of time prior to processing. Rather than impose additional regulatory burdens on the recycling of these materials, EPA should work with the industry to encourage the recovery of lead from spent batteries and other lead-bearing materials and to prevent the improper disposal of these materials. In an effort to work with the Agency in developing feasible management practices regarding the handling of spent batteries, lead plates and groups, and other lead-bearing materials, the SLSA offers the following proposals to allow lead recycling facilities to continue the storage of those materials prior to recycling:

A. EPA could, and should, specifically recognize that spent batteries, lead plates and groups, and other lead-bearing materials are exempt from regulation as a hazardous waste. As discussed above, EPA has recognized specific regulatory exemptions for certain of these materials. If these materials are not regulated as hazardous waste, the land disposal restrictions would not apply.

B. EPA could, and should, propose a specific regulatory exemption, in the context of the land disposal regulations, that would permit the storage of recyclable materials such as spent batteries, lead plates and groups, and other lead-bearing materials for up to one year prior to recycling regardless of whether these materials are regulated as hazardous waste. Such an exemption would be consistent with the existing provision that permits storage of hazardous waste in tanks or containers for up to one year prior to recycling. 40 C.F.R. §268.50. This exemption could be included as an amendment to this storage exemption provision.

C. EPA could, and should, propose a land disposal treatment standard for characteristically hazardous waste that would require the recycling of spent lead-acid batteries, lead plates and groups, and other lead-bearing materials and would allow the storage of those materials for up to one year prior to recycling. Such a proposal would be consistent with the primary objectives of the land disposal ban provisions and would encourage the recycling of these materials.

D. EPA could, and should, clarify the existing storage exemption provision by recognizing that, for purposes of the land disposal restrictions, the storage of recyclable materials such as lead plates and groups on concrete pads in buildings for up to one year prior to recycling and the storage of battery manufacturers' scrap in drums on concrete pads in buildings for up to one year prior to recycling would be allowed. In addition, such a clarification could, and should, recognize that the upright storage of spent batteries on concrete pads is a more appropriate method of storage than storage in containers or tanks and would be allowed for up to one year prior to recycling.

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The SLSA believes that these proposals are consistent with the primary objectives of the land disposal provisions and would be protective of the environment. If you would like to discuss these proposals or other issues related to your office's

Docket Number: LD12-00162 (continued)

Commenter: RSR Corporation

Comment: (continued)

of thermal recovery to the non-lead bearing components of a battery would be wasteful since these components have valuable recycling potential. Application of thermal recovery would, under these circumstances, be inconsistent with Federal recycling goals set forth in RCRA.

RSR urges EPA to establish a treatment standard for lead batteries of "utilization as raw material for SIC 3341 manufacturing processes." This treatment standard describes better and more accurately the technology in fact used in the metals manufacturing industry. It is also more flexible in that it recognizes that manufacturing processes other than smelting or melting can be utilized by the secondary lead manufacturing industry to produce lead and other metal and non-metal products.

D. RSR Supports A National Capacity Variance With Respect to Lead-Bearing Materials Accumulated In Staging Piles

EPA solicits comment on the need for a "national capacity variance" for lead-bearing materials that are accumulated in staging piles before being resmelted. See 54 Fed. Reg. at 48481 (col. 1). As more fully discussed below, RSR urges EPA to acknowledge that these lead-bearing materials are part of an on-going manufacturing process, and are not solid wastes. If EPA declines to acknowledge this fact and interprets the land disposal restriction to apply to materials in product staging areas, there would be inadequate national treatment capacity for the reclamation of lead batteries because lead smelting operations could be considered a violation of the prohibition on land disposal. Under these circumstances, RSR believes the issuance of a national capacity variance for these materials would be necessary and appropriate.

Before analyzing the legal and practical consequences of EPA's interpretation of the land disposal restrictions to lead-bearing materials at product staging areas at secondary smelters, RSR would like to comment on EPA's expressed lack of data with respect to the use of staging piles at secondary smelters. See id. RSR is surprised at this representation. RSR believes that it is fairly common knowledge that the technology for the extraction of metal constituents in the secondary lead manufacturing process is incremental. Thus, the use of staging piles in this industry, as in most metals manufacturing industries, is fundamental and essential, and no alternative technology exists now or will exist in the foreseeable future.

Moreover, EPA has issued specific guidance on how EPA regional administrators should respond to petitions from secondary lead smelters for variances from the classification as a solid waste submitted pursuant to 40 C.F.R. Section 260.31(c). See "Guidance for Secondary Lead Smelter Variances" memorandum from S. Lowrance to Waste Management Division Directors, Regions I-X (September 1, 1988) ("Guidance"). EPA Headquarters prepared this document, and an extensive background document,[1] in anticipation of requests from owners and operators of secondary lead smelters for variances from the definition of solid waste with respect to the lead plates and groups accumulated in staging piles. RSR understands five such variances have been issued.[2] In the Guidance, EPA specifically acknowledges that staging piles at primary and secondary lead manufacturing facilities are, for all practical purposes, identical both as to nature and use.

Based on the well-known fact that metal extraction at all secondary smelters occurs incrementally, and EPA's own extensive research into this issue, RSR is hard pressed to accept EPA's representation that it lacks sufficient data with respect to the use of staging piles at secondary lead manufacturing facilities. Nonetheless, to bridge this data gap, RSR suggests that staff in the Land Disposal and Waste Treatment Branches confer with staff in the Waste Characterization Branch who participated in the variance project to supplement their understanding of the use and nature of staging piles at secondary smelters. If after review of these data EPA seeks additional data, RSR would be pleased to assist the Agency.

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[1] Background Document for Secondary Lead Smelters Association Request for a Solid Waste Variance, EPA Contract No. 68-01-7287, MRI Project No. 9101-44(L) (Aug. 26, 1988). To assure that these documents are considered part of the record in this rulemaking, RSR expressly incorporates by reference in this RCRA docket each such document, as well as all documents on which EPA relied in their development.

[2] *See* letter from R. Steinwertzel to R. Scarberry (Sept. 18, 1989).

RSR does not understand RCRA regulations to apply to staging piles at secondary smelters. The analysis supporting RSR's reasoning is set forth in detail below.

Federal RCRA regulations specify that "[m]aterials are solid wastes if they are recycled -- or accumulated, stored, or treated before recycling -- [only] as specified in paragraphs (c)(1) through (4) of this section." See 40 C.F.R. § 261.2(c) (emphasis in original). Pursuant to 40 C.F.R. § 261.1(c)(7), a material is recycled if it is used, reused, or reclaimed. Reclamation, and thus recycling, clearly encompasses the processing of used lead batteries. 40 C.F.R. § 261.1(c)(4) states that a material is reclaimed "if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries . . . ." (emphasis added).

The RCRA rules specify certain types of materials that are not solid wastes when reclaimed. Table 1 of 40 C.F.R. § 261.2 lists those materials that are considered solid wastes when reclaimed within the meaning of 40 C.F.R. § 261.1(c)(4): spent materials, sludges listed in 40 C.F.R. Part 261.31 or 261.32, and scrap metal.

None of the battery components recovered at RSR's facilities constitutes a "spent material" within the meaning of the RCRA regulations. The term "spent material" is defined under 40

C.F.R. Section 261.1(c)(1) as "any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing." The battery processing that occurs at RSR's facilities does no more than recover the battery components. The components are not contaminated with either chemical or physical impurities. See 50 Fed. Reg. at 624 (reworded regulation clarifies that "spent materials are those that have been used, and as a result of that use become contaminated by physical or chemical impurities, and can no longer serve the purpose for which they were produced.") (Emphasis in original). No processing is necessary or in fact occurs at RSR's facilities to reduce or eliminate any contamination. All of the components are destined for beneficial reuse. Thus, none can be said to be a spent material within the meaning of the regulation.

Some of the battery components are "scrap metal" pursuant to 40 C.F.R. § 261.1(c)(6), which defines the term as "bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled." The battery components satisfying this description are the posts and grids. Scrap metal that is reclaimed, however, is not subject to regulation under RCRA at this time. See 40 C.F.R. § 261.6(a)(3(iv). The remaining battery components do not fall within the definition of scrap metal because they are not held together by bolts or soldering.

The slag from RSR's reverberatory furnaces is a by-product pursuant to 40 C.F.R. § 261.1(c)(3). The slag contains significant quantities of lead and is a by-product exhibiting a characteristic of hazardous waste. As such, however, it is not a solid waste when reclaimed; only listed by-products are solid wastes when reclaimed.

Emission control dust from smelting operations is a listed waste K069. This dust, however, is returned as feedstock to the original process that generated it. It is, therefore, not a solid waste pursuant to 40 C.F.R. § 261.2(e)(1)(iii). This conclusion is reinforced by the background document to the listing of emission control dust at 40 C.F.R. § 261.32, which provides in pertinent part:

> The emission control dust/sludge from reverberatory furnace smelting of secondary lead products is generated . . . during the smelting process and subsequently collected by air pollution control equipment . . . . The Agency wishes to make clear that it is not regulating those wastes which are recycled directly to the process as a hazardous waste . . . .

Since RSR's reverberatory furnace baghouse dust is directly conveyed via screw conveyors from the baghouse back to the reverberatory furnace for recovery of lead values, it was not EPA's intention to subject the dust to RCRA regulation.

Based on the foregoing, it is clear that under EPA's own rules implementing RCRA, the furnace feed material accumulated in staging piles is not a solid waste. These rules reflect Congress' intent in defining the term solid waste to include only materials that are in fact discarded.

The Court of Appeals for the District of Columbia Circuit recently confirmed and clarified this Congressional intent in American Mining Congress v. EPA, supra. The Court held in AMC that certain EPA regulations modifying the definition of solid waste so as to include reused or recycled materials exceeded EPA's regulatory authority. The Court found that the "ordinary, plain-English meaning of the word 'discarded' is 'disposed of,' 'thrown away,' or 'abandoned.'" Encompassing materials retained for immediate reuse, such as RSR's furnace feed material, within the scope of discarded material "strains to say the least, the everyday use of that term." Id. at 1184.

The Court ruled that in light of its expressed objectives in enacting RCRA, Congress used the term "discarded" to mean "disposed of" or "abandoned," not so as to include reused materials. Id. at 1185. Recycled or reused materials in an on-going manufacturing process, according to the Court, had simply not yet become part of the waste disposal problem Congress intended to eliminate in enacting RCRA. Id. at 1186.

As a matter of law, EPA is simply wrong in interpreting the land disposal restrictions to apply to furnace feed materials.

As a matter of fact, lead-bearing furnace feed materials are handled in bulk as opposed to containerizing this material for good reason. Loss must be minimized for commercial reasons. The lead content of the materials ranges between 65 and 75 percent. Any loss of lead represents lost product and, thus, lost profit.

Bulk handling is the most efficient way to protect against loss. Many protective measures are implemented to assure loss does not occur. The furnace feed material is never in direct contact with land or water. Rather, it is accumulated on reinforced concrete and is kept moist to prevent airborne particulate emissions. Moreover, the perimeter of accumulation areas is encircled by a runoff collection system whereby all runoff is collected and treated prior to discharge regulated under the Clean Water Act pursuant to 40 C.F.R. Part 421.

EPA has indicated, that placement of these materials in tanks or containers pursuant to 40 C.F.R. § 268.50(a)(2) would preclude application of the land disposal restrictions. Placement in containers or tanks, however, would necessarily result in far greater environmental risk than existing practices would allow. For example, tons of furnace feed material could lawfully remain in "empty containers" pursuant to the empty container rule.[1]

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[1] Under current RCRA regulations the disposal of hazardous waste residue remaining in empty containers is not subject to RCRA regulation. The rule allows between 0.3 and 3 percent by weight or 2.5 centimeters of depth of debris to remain in a container and escape RCRA regulation. *See* 40 C.F.R. § 261.7. *See* Table 1, appended, for an analysis of potential material

TABLE 1

POTENTIAL MATERIAL LOSS DUE TO CONTAINER MANAGEMENT AS OPPOSED TO BULK MANAGEMENT

ASSUMPTIONS:

CONTAINER SIZE:	3' X 3' X 3'	27 FT3
CONTAINER FULL WEIGHT:		5,400 LBS
FURNACE FEED PER BATTERY:		28 LBS
FURNACE FEED DENSITY:		200 LBS/FT3
DAYS PER MONTH:		30

BATTERIES CRACKED NO./DAY	FURNACE FEED LBS/DAY	CONTAINER USE NO./DAY	CONTAINER MANAGEMENT LOSS @ 0.3% LBS/DAY	@ 3% LBS/DAY	@ 2.54 cm LBS/DAY	CONTAINER MANAGEMENT LOSS @ 0.3% TONS/MONTH	@ 3% TONS/MONTH	@2.54 CM TONS/MONTH
3,571	100,000	19	300	3,000	2,850	4.5	45.0	42.8
7,143	200,000	37	600	6,000	5,550	9.0	90.0	83.3
10,714	300,000	56	900	9,000	8,400	13.5	135.0	126.0
14,286	400,000	74	1,200	12,000	11,100	18.0	180.0	166.5
17,857	500,000	93	1,500	15,000	13,950	22.5	225.0	209.3
21,429	600,000	111	1,800	18,000	16,650	27.0	270.0	249.8
25,000	700,000	130	2,100	21,000	19,500	31.5	315.0	292.5
28,571	800,000	148	2,400	24,000	22,200	36.0	360.0	333.0
32,143	900,000	167	2,700	27,000	25,050	40.5	405.0	375.8
35,714	1,000,000	185	3,000	30,000	27,750	45.0	450.0	416.3

Thus, an extraordinary amount of lead could lawfully escape into the environment by virtue of the very means EPA has proposed to prevent this from occurring.

Based on the foregoing, RCRA regulation does not apply to the furnace feed material. If EPA declines to accept this analysis, RSR urges EPA to issue a national capacity variance for such materials.[6] If the stockpiling of these feedstocks were to become subject to the land disposal restrictions, it is unlikely that RSR -- and other secondary smelters -- would be able to continue to use the staging areas. As a practical matter, there would be no treatment capacity available to process these materials because secondary lead facilities would be unable to do so without the risk of incurring liability for contravention of the land disposal restrictions. Under these circumstances, RSR urges EPA to issue a national capacity variance for these materials.

EPA has other options that merit its serious consideration. EPA should, for example, consider authorizing a generic "no migration" variance for secondary smelters. A permanent variance from the land disposal restrictions is allowed

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loss due to container management as opposed to bulk management.

[6] In so stating, RSR by no means concedes in any way that the materials in these piles are either solid or hazardous waste subject to the land disposal restrictions. RSR expressly reserves its right to challenge any such assertion in any future administrative or judicial proceeding implicating these issues.

under RCRA for certain prohibited wastes not meeting the treatment standards if the petitioner demonstrates there will be "no migration" of hazardous constituents from the disposal unit as long as the waste remains hazardous. See RCRA, Section 3004(e)(1); see also 40 C.F.R. § 268.6.

EPA is authorized to issue a generic no migration variance under these circumstances. In the Guidance referenced above, EPA conceded that for the most part, the furnace feed material qualifies for a national, generic variance from the definition of solid waste. EPA's Guidance is premised on the assumption that these materials are managed in ways that are not expected to impact adversely the environment.

In addition, EPA indicated that the issuance of a no migration variance is particularly appropriate where, as here, materials are accumulated for short periods of time and managed in a way to minimize loss. Specifically, EPA has identified three scenarios that satisfy the requirements of the statutory "no migration" variance. One of these involves the temporary storage of hazardous waste in land-based units "such as an indoor waste pile, where engineered containment systems are effective over the period the waste remains in storage." 51 Fed. Reg. 40605 (November 7, 1986).

Alternatively, EPA could acknowledge in the final rule that for purposes of Section 3004(j) and EPA's implementing regulations at 40 C.F.R. § 268.50(a)(2), the structures in which furnace feed materials are accumulated are "tanks." The structures within which battery recycling takes place fit squarely the description of a tank. Section 260.10 defines a tank as a "stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials, e.g., wood, concrete, steel, plastic which provides structural support." Structures housing staging areas are constructed primarily of steel and concrete and designed to contain its contents. See also In re Brown Wood Preserving Co., Docket No. RCRA-84-16-R, RCRA (3008) Appeal 86-4 (the tank requirements "plainly presuppose the existence of an uninterrupted, non-earthen barrier between the waste and the earth, i.e., a shell that provides structural support and effects containment") (emphasis in original).

RSR believes the definition of "tank" includes structures in which product staging piles are housed. EPA's acknowledgement of this interpretation in the final rule would simply eliminate any ambiguity that could otherwise arise in the future.

Some secondary smelter facilities do not store furnace feed materials in structures that fit squarely within the definition of tank. RSR thus urges EPA to issue a national capacity variance for these materials to allow owners and operators of such facilities adequate time to construct structures that satisfy the definition of tank.[27] A national capacity variance would be justified under these circumstances for the same reasons discussed above.

E. The Proposed Treatment Limit for D008 Wastewaters is Not Achievable

EPA has proposed a BDAT for lead-bearing wastewaters of 0.04 mg/l. EPA has alternatively proposed the characteristic level of 5.0 mg/l of lead as the BDAT for D008 wastewaters. The 0.04 mg/l proposed standard is not achievable. RSR thus urges EPA to establish the characteristic level for lead as the treatment standard for these wastewaters.

RSR has in-place a treatment technology that involves co-precipitation of wastewater metals with iron hydroxide. RSR adopted this treatment system to minimize sludge disposal by producing an on-site recyclable sludge. Iron matrix sludges, unlike calcium sulfate matrix sludges, are not refractory in nature, are amenable to on-site smelting, and thus are not solid wastes. See 40 C.F.R. § 261.2(c)(3). The effluent discharge from this

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[27] RSR understands EPA is considering revising the definition of tank under RCRA. See 54 Fed. Reg. 45272, 45312 (col. 3) (In the Regulatory Agenda, item no. 3105, EPA states its intent to clarify the difference between a tank, pile and surface impoundment). If EPA does so, it should confirm in this rulemaking or in any forthcoming definitional rulemaking that the definition of tank for purposes of compliance with Section 3004(j) and 40 C.F.R. § 268.50(a)(2) remains unchanged. The need for a national capacity variance for furnace feed material would be even more acute if EPA declined to "grandfather" the current definition of tank for these purposes.

Docket Number: LD12-00174

Commenter: East Penn Manufacturing Co., Inc.

Comment:

("RCRA")[2]. East Penn recycles over 3 million spent lead acid batteries annually; every such battery recycled is one less battery that will be sent to a landfill or illegally disposed of in some other fashion. Based upon these valid policy reasons, EPA should, therefore, set treatment standards which will ensure that this desirable activity is continued until technology can be developed to produce residues from the secondary smelting operations with leach levels consistently below the characteristic level of 5.0 mg/l or until capacity can be developed to treat the residues through stabilization.[3]

From a legal standpoint there is no reasonable basis to support EPA's decision to apply a treatment standard to the slag

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[2] See RCRA Section 1002(c), 42 U.S.C. § 6901(c) (reciting the congressional finding that "(1) millions of tons of recoverable material which could be used are needlessly buried each year; (2) methods are available to separate usable materials from solid waste; and (3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments"); RCRA Section 1003(a)(6), 42 U.S.C. § 6902(a)(6) (articulating the congressional objective of "minimizing . . . the land disposal of hazardous waste by encouraging . . . materials recovery"). See also H.R. Rep. No. 1491, 94th Cong., 2d Sess. 11 (1976) (RCRA "proposes a way to lessen the drain on our domestic resources and to decrease our dependence on foreign sources of raw material and energy, both of which can be reclaimed from waste").

[3] To do otherwise could result in a rule contrary to the policy of RCRA in setting recycling as a desirable goal. Unrealistic treatment standards for the waste produced in recycling could have the effect of "taxing" recycling and thereby make the use of virgin lead more attractive.

Docket Number: LD12-00178 (continued)

Commenter: Battery Council International (BCI)

Comment: (continued)

3. BCI supports the SLSA's comments and the comments of the RSR Corporation. Particularly, BCI agrees that a national capacity variance is appropriate with respect to treatment standards governing intermediate storage of secondary materials used as feedstocks in secondary smelters.

7.6 INSUFFICIENT HIGH ZINC K061 NONWASTEWATER HTMR CAPACITY

Summary:

Five commenters (Laclede Steel Company (134), Waste Management, Inc. (WMI; 159), the American Iron & Steel Institute (160), Steel Manufacturers Association (SMA; 274) and the Specialty Steel Industry of the United States (SSIUS; 276)) supported the extension of the interim stabilization standard for high zinc K061 nonwastewaters because of insufficient High Temperature Metals Recovery (HTMR) treatment capacity. Laclede (134) supported HTMR as the method of treatment, but stated that it has extensive data, recognized by EPA, demonstrating the lack of HTMR capacity. SMA (274) and SSIUS (276) stated it would be easier for EPA to grant an across-the-board variance rather than process hundreds of individual variances.

SMA (274) and SSIUS (276) stated that because many steel companies are having difficulty finding facilities to reclaim metals from their K061 nonwastewaters, some companies are looking to develop HTMR processes on-site. Laclede (134) has contracted with Elkem Technologies to build a 40,000 ton/year capacity HTMR furnace which will have sufficient capacity to treat all its K061 waste accumulated and generated on-site. WMI has decided to construct a commercial 100,000 ton/year HTMR facility in Mississippi and needs the interim extension while the planned facility is developed. However, SMA and SSIUS added that steel companies would be reluctant to spend millions of dollars on HTMR furnaces and then be unable to land dispose slag generated from these furnaces because it falls outside the scope of EPA's final indigenous waste rule. The requested variance extension would allow the steel industry to develop sufficient HTMR capacity by constructing appropriate furnaces.

Response:

This waste was covered in the First Third rule. The existing concentration standard based on stabilization for nonwastewaters remains in effect until August 1991. If the commenters cannot find adequate capacity for K061 nonwastewaters, the commenters may want to consider applying for a case-by-case extension.

Comments: The comments relevant to insufficient high zinc K061 nonwastewater HTMR capacity are presented in the following order:

- Laclede Steel Company (134: pp. 1-3);
- Waste Management, Inc. (WMI; 159: pp. 61-63);
- American Iron & Steel Institute (160: pp. 3-4);
- Steel Manufacturers Association (SMA; 274: p. 11); and
- Specialty Steel Industry of the United States (SSIUS; 276: pp. 10-11);

Docket Number: LD12-00134 (continued)

Commenter: Laclede Steel Company

Comment: continued)

Introduction

The following are the comments of Laclede Steel Company, Alton, Illinois, in response to the solicitation for comments by USEPA in the Proposed Rule for the Land Disposal Restrictions for Third Scheduled Wastes, 54 Fed. Reg. 48371. Laclede Steel Company supports the Agency's proposal to list H.T.M.R. as BDAT for high zinc K061, and th interpretation that the slag produced by the process can be landfill without further treatment. However, at this time there is not sufficient capacity to treat all high zinc K061 in an H.T.M.R. process, and we would support the extension of the interim standard. The remainder of Laclede's comments respond in particular to the Agency's solicitations for comments which appear on pages 48379 and 48496, with respect to the storage prohibition of 40 CFR Sec. 268.50(a)(2). For the reasons set forth below, Laclede supports the Agency's decision to reconsider the inequitable effect of that prohibition on legitimate storage, and endorses an alternative interpretation wherein the storage prohibition only applies if storage is surrogate disposal or if storage is otherwise undertaken for purposes of evading a land disposal prohibition.

Laclede is concerned that legitimate storage is technically prohibited under the current regulation and Laclede supports alternative approaches for prohibiting storage and agrees with the Agency that the regulations as currently written create a disincentive to construction of new metal recovery capacity.

As recognized by USEPA in its solicitation for comments at 54 Fed. Reg. 48496, Congress intended the storage prohibition to prohibit the use of long term storage to circumvent treatment requirements imposed by the land disposal ban. The storage prohibition regulation, however, placed emphasis on the amount of waste being stored and the purpose of facilitating proper management.

JAN 1 1 1990

Docket Number: LD12-00134

Commenter: Laclede Steel Company

Comment:

Effect of the Storage Prohibition on Laclede Steel

Laclede is in a unique position to comment on the inequitable effect of the storage prohibition because it is currently in a situation similar to one outlined as an example in the proposed rules on page 48496, wherein the storage of prohibited waste during the on-site construction of treatment capacity may be considered a violation of the storage prohibition.

Laclede Steel Company operates a steel mill in Alton, Illinois. Laclede captures electric arc furnace dust in baghouses, which dust is a listed hazardous waste, K061, which after a court ordered stay of the treatment standard, became subject to the land disposal restrictions on February 24, 1989. The land disposal restrictions identify the BDAT treatment for Laclede's K061 as the reclaiming of metals in a high temperature metals recovery ("HTMR") furnace. Since approximately 1980, Laclede has been storing K061 in interim status units on-site in anticipation of recyclling K061 through an HTMR to recover zinc. Between the time the storage prohibition became effective and the time Laclede will begin to process K061 in the H.T.M.R. Plant, Laclede will have generated [illegible]0,000 tons of K061. All of this material will be pelletized and stored in an interim status unit in a secure building. This material is subject to the Storage Prohibition of Sec. 268.50. Before the land ban became effective, in order to satisfy the requirements of the land ban that K061 be treated in an HTMR, Laclede began investigating the availability of off-site HTMR treatment capacity. After exhaustive inquiry, research and interviews with companies purporting to have available treatment capacity, Laclede concluded that there was insufficient available off-site HTMR capacity[1], and determined that the only way to satisfy the requirements of the land ban for K061 would be to build an on-site HTMR. In its efforts to identify state-of-the-art HTMR units, Laclede spent hundreds of hours evaluating available HTMR technologies both in the United States and abroad. After careful evaluation of the different HTMR technologies available, Laclede chose Elkem Technologies of Oslo, Norway, to be the contractor for the construction of an HTMR plant at Laclede Steel's Alton, Illinois

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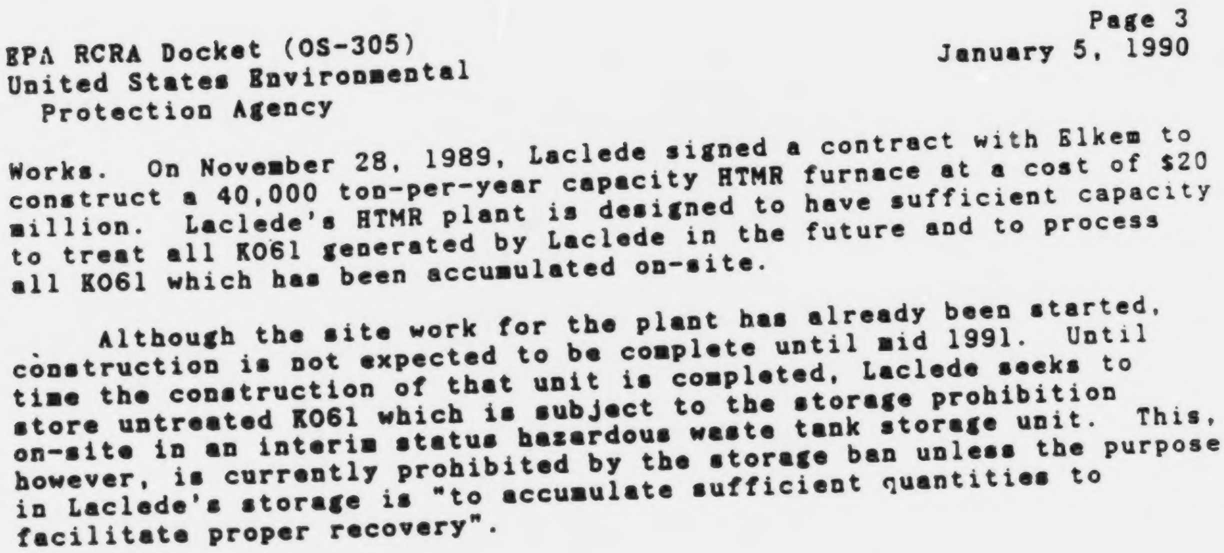
[1] Laclede has extensive data supporting its inquiries and conclusion that adequate off-site HTMR treatment capacity is not available. This conclusion is recognized by both USEPA and the Illinois Environmental Protection Agency.

Docket Number: LD12-00134 (continued)

Commenter: Laclede Steel Company

Comment: (continued)



Works. On November 28, 1989, Laclede signed a contract with Elkem to construct a 40,000 ton-per-year capacity HTMR furnace at a cost of $20 million. Laclede's HTMR plant is designed to have sufficient capacity to treat all K061 generated by Laclede in the future and to process all K061 which has been accumulated on-site.

Although the site work for the plant has already been started, construction is not expected to be complete until mid 1991. Until time the construction of that unit is completed, Laclede seeks to store untreated K061 which is subject to the storage prohibition on-site in an interim status hazardous waste tank storage unit. This, however, is currently prohibited by the storage ban unless the purpose in Laclede's storage is "to accumulate sufficient quantities to facilitate proper recovery".

Docket Number: LD12-00159

Commenter: Waste Management, Inc. and Chem Waste Management Inc.

Comment:

D. Standard for K061 Non-Wastewater (54 Fed. Reg. at 48,457)

1. Extension of Stabilization-Based Treatment Standard

EPA solicits comments on whether to extend the duration of the existing, interim treatment standard for K061, which is based on the performance of stabilization technology. 54 Fed. Reg. at 48,457. It notes that available information suggests insufficient high temperature metals recovery (HTMR) capacity exists to handle the demand for the high zinc subcategory of K061. Rather than be confronted by a host of petitions for case-by-case extensions, EPA asks for information concerning efforts that have been made to construct and operate HTMR facilities and arrangements that are being made to enter into contracts to use this technology.

WMI is pleased EPA has taken this approach to resolving the current shortfall in HTMR capacity. As EPA knows, the permitting and construction of a new hazardous waste treatment facility is expensive and time consuming. HTMR facilities present a unique problem in this regard because the category of wastes they can handle is limited.

Docket Number: LD12-00159 (continued)

Commenter: Waste Management, Inc. and Chem Waste Management Inc.

Comment: (continued)

Following three years of extensive discussions with producers of K061, WMI has completed a proposal to own and operate a high temperature metal recovery facility in the Jackson, Mississippi area. As projected, the facility will have the capacity to manage up to 100,000 tons of K061 per year. The actual capacity of the facility, and in fact its construction, depend, however, upon WMI's obtaining binding contractual commitments from generators to use the facility once it is operating.

WMI presented a proposal and service contract to a large group of generators in December 1989 seeking commitments to use the facility. The company has concluded that it must have commitments totalling 40,000 tons of K061 per year to commence construction. If EPA does not extend the interim standard, all generators making such a contractual commitment will be forced to seek case-by-case extensions instead.

The proposed facility will require a RCRA Part B storage permit, as well as permits for air and water discharges. Assuming sufficient commitments from generators are obtained, our schedule for permitting and constructing the facility is from fifteen to eighteen months.

Docket Number: LD12-00159 (continued)

Commenter: Waste Management, Inc. and Chem Waste Management Inc.

Comment: (continued)

We are too early in the solicitation process to provide firm information concerning when, or even whether, the facility will be available. Early reactions from generators have been generally favorable. As the expiration date for the interim standard (August 8, 1990)) nears, we believe the need for a

nationwide extension of the interim standard will become even more clear.

We urge the Agency to act now on its broad solution to the current HTMR capacity shortfall, rather than leave generators no other option but to seek case-by-case extensions. We would be happy to provide the Agency more information about the proposed Jackson facility as it becomes available.

Docket Number: LD12-00160

Commenter: American Iron & Steel Institute

Comment:

EPA solicits comments on extending the existing interim treatment standard for another year. There is insufficient high temperature metals recovery capacity to handle the demand for processing this material. The Ohio Department of Development recently entered into an agreement with the Ohio Steel Consortium to fund a study to evaluate recovery processes and to determine the feasibility of a regional dust processing facility. A basis for this project is the determination that "currently there is insufficient capacity available in the U.S. to thermally treat all the EAF dust generated as required by the EPA regulations." That study (and others) clearly indicate that additional capacity is needed. AISI,

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therefore, recommends that the existing interim standard be extended for another year in order to reduce the administrative burden of individual operators seeking capacity variances for this waste.

Docket Number: LD12-00274

Commenter: Steel Manufacturers Association

Comment:

10. EPA should extend the variance period of the permanent HTMR treatment standard for high zinc K061.

EPA solicits comments on the advisability of extending the duration of the existing, interim treatment standards (based on stabilization technology) for another year because available information suggests that there is still insufficient high temperature metals recovery (HTMR) capacity. EPA correctly recognizes that in light of this inadequate capacity, it would be far more cost-effective and efficient for the Agency to grant an across-the-board variance rather than process hundreds of individual case-by-case variances.

Our findings support EPA's conclusion. Individual SMA member companies are still having tremendous difficulty in locating facilities that have available capacity to reclaim metals from their K061. In response to this shortage of capacity to treat K061 by HTMR, some steel companies are looking to develop HTMR processes on site. These companies' good faith efforts to meet the upcoming HTMR treatment standards have been thwarted, however, by the cloud of uncertainty over the future regulation of K061 land disposal. Specifically, steel companies are reluctant to spend millions of dollars on HTMR furnaces and then be unable to land dispose slag generated from these furnaces because it falls outside the scope of EPA's final indigenous waste rule. Consequently, EPA should extend the variance for the high zinc K061 treatment standards so that the treatment industry and the steel industry can develop sufficient HTMR capacity by constructing and operating furnaces that respond to and comply with the major regulatory changes pertaining to K061 land disposal that currently are taking place.

Docket Number: LD12-00276 (continued)

Commenter: Specialty Steel Industry of the United States

Comment: (continued)

10. EPA should extend the variance period of the permanent HTMR treatment standard for high zinc K061.

EPA solicits comments on the advisability of extending the duration of the existing, interim treatment standards (based on stabilization technology) for another year because available information suggests that there is still insufficient high temperature metals recovery (HTMR) capacity. EPA correctly recognizes that in light of this inadequate capacity, it would be far more cost-effective and efficient for the Agency to grant an across-the-board variance rather than process hundreds of individual case-by-case variances.

Our findings support EPA's conclusion. Many steel companies are still having tremendous difficulty in locating facilities that have available capacity to reclaim metals from their K061. In response to this shortage of capacity to treat K061 by HTMR, some steel companies are looking to develop HTMR processes on site. These companies' good faith efforts to meet the upcoming HTMR treatment standards have been thwarted, however, by the cloud of uncertainty over the future regulation of K061 land disposal. Specifically, steel companies are reluctant to spend millions of dollars on HTMR furnaces and then be unable to land dispose slag generated from these furnaces because it falls outside the scope of EPA's final indigenous waste rule. Consequently, EPA should extend the variance for the high zinc K061 treatment standards so that the treatment industry and the steel industry can develop sufficient HTMR capacity by constructing and operating furnaces that respond to and comply with the major regulatory changes pertaining to K061 land disposal that currently are taking place.

7.7 CAPACITY VARIANCE REQUESTS FOR K061 WASTEWATERS

Summary:

Three commenters (Northwestern Steel and Wire Co. (NS&W; 152), Steel Manufacturers Association (SMA; 274) and Specialty Steel Industry of the United States (SSIUS; 276)) requested that EPA grant a two-year national capacity variance for K061 wastewaters requiring the installation of chromium reduction technology. SMA and SSIUS stated that if steel companies are required to treat K061 wastewaters by chromium reduction, they would have to obtain complex chromium reduction technology. SMA and SSIUS asserted that the installation and permitting time for such equipment would require several months; NS&W said installing the appropriate technology would require a minimum of two years. NS&W said that most facilities like themselves that use wet scrubbers for the control of electric arc furnace dust believe they could not achieve the proposed standards for chrome (0.32 mg/L) using present technology.

NS&W (152), SMA (274), and SSIUS (276) also requested that EPA grant a national capacity variance for K061 wastewaters with a high pH. SMA and SSIUS said a variance is needed because the BDAT process for surface disposed or deepwell-injected K061 wastewaters, chromium reduction followed by lime precipitation, is only effective for wastewaters with a relatively low pH. NS&W requested a capacity variance for high pH K061 wastewater because of the need to reduce the wastewater's pH in order to treat chromium. SMA and SSIUS stated that the transfer of performance data or capacity determinations from K062 wastewaters to K061 wastewaters, which have a higher pH, is inappropriate. The three commenters added that the development of a workable precipitation system that can effectively treat high pH K061 wastewaters will take time.

Response:

EPA has no data indicating that K061 wastewaters are being land disposed. Analysis of the data set revealed no deepwell-injected or surface disposed volumes of K061 wastewaters requiring treatment capacity for this rulemaking (See Background Document for Third Third Wastes to Support

40 CFR Part 268 Land Disposal Restrictions, Proposed Rule Nov. 1989). EPA has data indicating that 79 million gallons of chromium reduction capacity is available. The commenters did not provide sufficiently detailed information for EPA to revise the capacity analysis for K061 wastewaters. If the commenters cannot find adequate capacity for K061 wastewaters, the commenters may want to consider applying for a case-by-case extension. If, on the other hand, the commenters believe that their waste is significantly different from the waste used to determine the treatment standard, they may want to consider applying for a treatability variance. Consequently, EPA has no information to support a national capacity variance.

Comment:

The comments relevant to the capacity variance requests for K061 Wastewaters are presented in the following order:

- Northwestern Steel and Wire Co. (NS&W; 152: pp. 2-5);
- Steel Manufacturers Association (SMA; 274: p. 9);
- Specialty Steel Industry of the United States (SSIUS; 276: p. 9).

Commenter: Northwestern Steel and Wire Company

Comment:

It uses high energy wet scrubbers to treat the fumes from the electric arc furnaces and treats the wastewater from the scrubbers in a recycle system employing clarification with chemical addition. Of the 25,000-30,000 GPM water which is recycled within this system, blowdown consists of approximately 2,000-5,000 GPM of wastewater. Blowdown from this system is discharged to the plant central wastewater recycle system constructed and operated pursuant to NPDES, NS&W's permit and state agreements. It is NS&W's understanding that it is one of five facilities using wet scrubbers for the control of electric arc dust and fumes. One of these facilities is a specialty steel producer and is not directly analogous to NS&W's. One of the other facilities may not be subject to these regulations. The balance of the facilities, like NS&W, believe they cannot achieve the proposed standards, particularly for lead (.04 mg/l) and chrome (0.32 mg/L) utilizing present technology.

With respect to NS&W's facility, it presently is operating a wastewater treat system for the recycled scrubber water which, in all respects, meets the design parameters for lead on which the purported standards are based. It operates at an optimum pH of approximately 9.2 and uses chemical addition to enchance solids settling. (It does not adjust pH because it is already on the optimum range as the result of the use of lime in the furnace.) Nevertheless, its testing establishes that the effluent from this facility cannot meet the proposed standards.

Docket Number: LD12-00152 (continued)

Commenter: Northwestern Steel and Wire Company

Comment: (continued)

(See Table 1) Moreover, as is further discussed herein, additional modifications to the existing clarification system cannot be expected to meet these standards, nor can it be reliably predicted that the addition of even fine media filtration would achieve the standards for lead. The proposed standards cannot be considered BDAT for electric arc furnaces.

As discussed below, studies by NS&W's consultants, Yates and Auberle, Ltd., and a review of the available literature establishes that the transfer of K062 technology utilizing pH adjustment, chemical addition and clarification does not produce the same results for K061 wastewater. Treatment of K062 wastewater produces a lead hydroxide which readily forms a flock and settles in the clarifying facilities. K061 produces lead oxides which neither agglomerate in a clarification process nor settle nearly as readily. Therefore, U. S. EPA's proposed technology transfer is without basis in the record and would be arbitrary and capricious.

There is, therefore, no way in which NS&W can achieve the proposed standards by May of 1990 and continue operation of its steel mill facilities. At a minimum it would require a two-year variance in order to develop, perfect and install new technology to achieve the purported standards and even then would not any have assurance that it could achieve compliance with these numbers.

Docket Number: LD12-00152 (continued)

Commenter: Northwestern Steel and Wire Company

Comment: (continued)

NS&W further requests a two-year capacity variance if these or even similar standards requiring treatment are to be imposed. Since existing facilities cannot achieve the standards proposed by U. S. EPA, any new standards will require additional construction of new facilities. Design, permitting, ordering and installation of any such facilities will require a minimum of two years from the time such standards become final. Furthermore, it should be noted that flows of 2,000 to 5,000 gallons a minute (i.e., 3-7 million gallons per day) cannot practicably be transferred to other treatment facilities even assuming they could achieve limitations proposed by the U. S. EPA. NS&W is unaware of any treatment facility which could accept this waste and produce the quality of treatment demanded by U. S. EPA.

Docket Number: LD12-00152

Commenter: Northwestern Steel and Wire Company

Comment:

With respect to the standards for chromium, the model treatment would require adjustment of the pH to the level of approximately 2 in order to reduce the chromium and then readjustment of the pH to the optimum range of 9.2 for removal of lead and other heavy metals. Since the reduction in the pH is inconsistent with the operation of the existing system, it would result in a significant increase in dissolved solids, a significant increase in the sludge produced, and an unknown but potentially dilatorious impact on sludge characteristics. Thus the use of pH adjustment for chrome removal could interfere with carrying out BDAT for the sludge to meet the existing "First Third" limitations.

NS&W therefore proposes that the standards for K061 wastewater either be deleted or revised to merely specify that the technology now installed is BDAT or to specify numbers which that technology can be reasonably expected to achieve. If EPA declines to withdraw or revise the proposed standards for K061 wastewater, at a minimum, NS&W requests a two-year capacity variance in order to design and construct the facilities necessary to achieve the limits that can be met by current technology.

Docket Number: LD12-00274

Commenter: Steel Manufacturers Association

Comment:

7. **EPA should grant a national capacity variance for any treatment standards that would require the installation of chromium reduction equipment.**

If EPA requires D007 or K061 wastewaters to be treated by chromium reduction, steel companies will have to order, construct, and make operational, complex chromium reduction technology. Manufacturers of chromium reduction equipment have recently informed SMA member companies that it would take three to six months to manufacture and deliver such chromium reduction equipment. In order to install such equipment, a steel company would first have to make major modifications to its wastewater treatment system including the addition of pumps and manholes. Before a chromium reduction system could be operational, a steel company would have to obtain approval from the requisite control authority to modify its NPDES permit and perhaps even to obtain a RCRA hazardous waste treatment permit. Consequently, EPA should grant a two year national capacity variance for any treatment standards requiring the installation of chromium reduction technology.

Docket Number: LD12-00274

Commenter: Steel Manufacturers Association

Comment:

8. EPA should grant a national capacity variance for K061 wastewaters with a high pH.

EPA has not proposed to grant a national capacity variance for K061 wastewaters that are surfaced disposed on the grounds that adequate treatment capacity exists. However, the BDAT process for K061 wastewaters of chromium reduction followed by lime precipitation is only effective for and therefore has only been applied to wastewaters with a relatively low pH. It is inappropriate for EPA to transfer performance data or capacity determinations from K062 wastewaters to K061 wastewaters which have a significantly higher pH. See section 6 of these Comments. It will take significant time to develop and make operational a chemical precipitation system that can effectively treat high pH K061 wastewaters. Consequently, EPA should grant a two year national capacity variance for K061 wastewaters with a high pH that either is surface disposed or deep well injected.

Section 6:

Third, K062 wastewaters typically have a low pH and therefore will precipitate when lime, a base and an effective flocculent, is added. K061 wastewaters, on the other hand, typically have a high pH. (See August 25, 1989 letter from Mr. Peters of SMI to Versar, Inc., attached hereto as Exhibit A). In fact, K061 leachate derived from monofilled K061 typically has a pH above 12. Id. Consequently, acid addition (rather than lime treatment) will be required to adjust the pH of K061 wastewaters to precipitate metals. There is simply no available data to determine whether metals will become insoluble and settle from K061 wastewaters as effectively as from K062 wastewaters in the absence of a flocculating agent such as lime. In fact, available scientific data indicates that the metals in K061 will not precipitate as effectively as the metals in K062. This is because most metals, and particularly lead, are insoluble within a narrow pH range. Lead hydroxide reaches its minimum solubility of approximately 0.08 mg/l at a pH of 9.2. Changes from this optimum pH will increase the lead concentration significantly. For instance, at a pH of 10 the solubility of lead is 0.3 mg/l and at a pH of 8, the solubility is 10 mg/l. Given the solubility of lead, it is operationally impossible to maintain the pH within the very narrow range that would be necessary to comply with a lead concentration in the range of 0.04 mg/l.

Docket Number: LD12-00276

Commenter: Specialty Steel Industry of the United States

Comment:

7. **EPA should grant a national capacity variance for any treatment standards that would require the installation of chromium reduction equipment.**

If EPA requires D007 or K061 wastewaters to be treated by chromium reduction, steel companies will have to order, construct, and make operational, complex chromium reduction technology. Manufacturers of chromium reduction equipment have recently informed some steel companies that it would take three to six months to manufacture and deliver such chromium reduction equipment. In order to install such equipment, a steel company would first have to make major modifications to its wastewater treatment system including the addition of pumps and manholes. Before a chromium reduction system could be operational, a steel company would have to obtain approval from the requisite control authority to modify its NPDES permit and perhaps even to obtain a RCRA hazardous waste treatment permit. Consequently, EPA should grant a two year national capacity variance for any treatment standards requiring the installation of chromium reduction technology.

Docket Number: LD12-00276

Commenter: Specialty Steel Industry of the United States

Comment:

8. EPA should grant a national capacity variance for K061 wastewaters with a high pH.

EPA has not proposed to grant a national capacity variance for K061 wastewaters that are surfaced disposed on the grounds that adequate treatment capacity exists. However, the BDAT process for K061 wastewaters of chromium reduction followed by lime precipitation is only effective for and therefore has only been applied to wastewaters with a relatively low pH. It is inappropriate for EPA to transfer performance data or capacity determinations from K062 wastewaters to K061 wastewaters which have a significantly higher pH. See section 6 of these Comments. It will take significant time to develop and make operational a chemical precipitation system that can effectively treat high pH K061 wastewaters. Consequently, EPA should grant a two year national capacity variance for K061 wastewaters with a high pH that either is surface disposed or deep well injected.

Section 6:

Third, K062 wastewaters typically have a low pH and therefore will precipitate when lime, a base and an effective flocculent, is added. K061 wastewaters, on the other hand, typically have a high pH. (See August 25, 1989 letter from Mr. Peters of SMI to Versar, Inc., attached hereto as Exhibit A). In fact, K061 leachate derived from monofilled K061 typically has a pH above 12. Id. Consequently, acid addition (rather than lime treatment) will be required to adjust the pH of K061 wastewaters to precipitate metals. There is simply no available data to determine whether metals will become insoluble and settle from K061 wastewaters as effectively as from K062 wastewaters in the absence of a flocculating agent such as lime. In fact, available scientific data indicates that the metals in K061 will not precipitate as effectively as the metals in K062. This is because most metals, and particularly lead, are insoluble within a narrow pH range. Lead hydroxide reaches its minimum solubility of approximately 0.08 mg/l at a pH of 9.2. Changes from this optimum pH will increase the lead concentration significantly. For instance, at a pH of 10 the solubility of lead is 0.3 mg/l and at a pH of 8, the solubility is 10 mg/l. Given the solubility of lead, it is operationally impossible to maintain the pH within the very narrow range that would be necessary to comply with a lead concentration in the range of 0.04 mg/l.

7.8 UNDERESTIMATION OF EP TOXIC WASTE QUANTITY FROM THE FOUNDRY INDUSTRY AND AVAILABILITY OF ADEQUATE TREATMENT CAPACITY FOR THIS WASTE

Summary:

Two commenters (American Foundrymen's Society, Inc. (AFS; 42) and Hazardous Waste Treatment Council (HWTC; L0247) addressed the issue of EP toxic waste from the Foundry Industry. One commenter (AFS; 42)) asserted that EPA underestimated the quantity of wastes generated by foundry and ingot manufacturers. The commenter submitted data showing that 317,669 tons of potentially EP toxic materials were generated by foundries in 1988. Although the wastes are not now considered hazardous, the commenter stated that under new testing procedures, such as the TCLP, these wastes could potentially be considered subject to LDRs. In that case, EPA will have significantly underestimated the waste quantity requiring treatment.

Hazardous Waste Treatment Council (HWTC; L0247) asserted that enough capacity exists to treat the .317 million tons/year of EP toxic lead waste which AFS (42) stated was unaccounted for by EPA.

Response:

EPA acknowledges the American Foundrymen's Society's concerns on future TCLP toxic wastes generated in the foundry industry. The capacity analyses have been based on volumes of land disposed wastes that are currently classified as hazardous, see section 3004(g)(5) (The Third Third prohibition is for wastes hazardous on November 7, 1984, not newly identified wastes). However, assuming that an additional .317 million tons of waste would need stabilization capacity, there would still be adequate capacity for these wastes. Thus, EPA has decided to not grant a national capacity variance for these wastes.

Comments:

The comments relevant to an underestimation of EP toxic waste quantity from the foundry industry are presented in the following order:

- American Foundrymen's Society, Inc. (AFS; 42: pp. 1-2); and
- Hazardous Waste Treatment Council (HWTC; L0247: p. 10).

Docket Number: LD12-00042

Commenter: American Foundrymen's Society, Inc.

Comment:

Esco International
J.A. Dunn
Ashland Chemical Co
D.W. Giles
Avis Metalcasters Service Ltd.
T.M. Hartman
Pennsylvania Steel Foundry & Machine Co
R.L. Howell
Omaha Steel Castings Co.
R. Landsbruner
Midwest Foundry Co., The Marmon Group
R.B. McClelland
McClelland & Co.
W. M. O'Neil
Alloy Engineering & Casting Co.
J.D. Pearson
Aurora Industries Inc.
J.R. Ponsen
Lester B. Knight & Associates Inc.
R.A. Rundquist
Rockford Foundries Inc.
G.J. Seep
Viking Engineered Cast Products,
Viking Pump - IDEX
H.G. Weeks
Clarkson Carolina Corp
T.E. Woerdle
Wells Manufacturing Co
[illegible]
C.H. Jones

It is apparent that the Agency in its proposal has considered neither the quantity nor the type of waste material which is generated by the foundry industry, its ingot and other suppliers. We have no quarrel with this situation if it in fact represents an Agency determination that these materials (e.g., foundry sand, furnace brick, emission control dusts) are not hazardous wastes and thus are not subject to the land ban and other regulations promulgated under the Resource Conservation Recovery Act as amended.

However, if the Agency presently or at some future date takes the position that certain of these materials are or may be hazardous (e.g., under the TCLP procedure which is now being considered), then we respectfully submit that the Agency has seriously underestimated the capacity required to treat these materials -- and has proposed treatment standards based on technology from other industries that is inapplicable to the foundry industry and its ingot and other suppliers. See, e.g., "Sampling and Analysis of Waste Generated By Gray Iron Foundries," EPA Document #EPA-600/4-81-028, Attachment 1. See also analysis of nonferrous foundry industry and ingot industry as set forth in the OSHA Lead Remand Rulemaking, 54 Fed. Reg. 29142-29275, July 11, 1989. We hereby incorporate by reference as if fully set forth herein all documents included in that OSHA lead proceeding -- and in the related litigation which is pending before the U.S. Court of Appeals for the D.C. Circuit (United Steelworkers of America, et al. v. Secretary of Labor, No. 79-1048) which involve the nonferrous foundry and ingot industries.

Underestimation of Quantity

The data in the subject proposal only lists in general terms the quantity generated by SIC major code 33, Primary Metals Industry, in which many, but not all, foundries and ingot manufacturers fall. For example, by our estimates, at least 317,669 tons of potentially EP toxic materials were generated by foundries in 1988 (Attachment 2).

As indicated above, this underestimation is also affected by the imminent change in the procedure to be used for testing wastes. The TCLP procedure which has been proposed is generally regarded as being more aggressive than the EP procedure. As a result, an unknown but potentially large volume of foundry wastes may be reclassified as hazardous and be required to meet treatment standards. As indicated in the record for the OSHA Lead Remand proceeding, the foundry industry and its ingot industry suppliers are essential to the national economy but confront a very bleak economic situation. The impact of the Agency's proposal upon the foundry and ingot industry should receive detailed analysis by the Agency and by all sectors of the Administration if the Agency believes the materials utilized in the foundry and ingot industry may be hazardous wastes subject to the land ban and other RCRA requirements.

Docket Number: LD12-00042 (continued)

Commenter: American Foundrymen's Society, Inc.

Comment: (continued)

"EP TOXIC WASTES POTENTIALLY GENERATED BY THE U.S. FOUNDRY INDUSTRY"

The following information and calculations are based on a phone survey of 200 ferrous (iron and steel) foundries, Department of Commerce data, Bureau of Mines data, EPA report titled "Sampling and Analysis of Wastes Generated by Gray Iron Foundries" (EPA-600/S4-81-028), and common practices in the foundry industry.

EP TOXIC WASTE VOLUME POTENTIALLY GENERATED BY IRON AND STEEL FOUNDRIES

For every ton of metal melted by an iron or steel foundry, approximately 20 pounds of air pollution dust/sludge is generated.

According to the Bureau of Mines, iron and steel foundries purchased 20,545,000 short tons of ferrous scrap in 1988. This figure may be underreported due to foundries not responding to the Bureau of Mines survey.

Of the 200 iron and steel foundries responding to a phone survey, 125 reported that their air pollution control dust/sludge was EP toxic for either lead or cadmium.

Therefore, the volume of EP toxic air pollution control dust/sludges generated by iron and steel foundries in 1988 is approximately:

(dust generation rate) x (melted metal rate) x (% EP toxic)

or

(20 pounds/ton melted) x (20,545,000 tons melted) x (125 200)

or

256,812,500 pounds

or

aproximately 128,406 tons of EP toxic dust/sludges.

ATTACHMENT 2
Page 2 of 2

EP TOXIC WASTE VOLUME POTENTIALLY GENERATED BY BRASS AND BRONZE FOUNDRIES

For every ton of metal melted, 500 pounds of waste sand is produced.

98% of waste sand from brass/bronze foundries is EP toxic for lead.

Typical yield (weight of casting shipped divided by weight of metal melted) is 33% for a brass/bronze foundry.

According to the Department of Commerce, 515,000,000 pounds (257,500 tons) of brass/bronze castings were shipped in 1988.

Therefore, 772,500 tons of metal was melted by brass/bronze foundries in 1988 (tons shipped divided by yield).

Volume of EP toxic waste sand generated by brass/bronze foundries in 1988 is approximately:

(waste generation rate) x (metal melted) x (% EP toxic)

or

(500 pounds/ton melted) x (772,500 tons melted) x (98%)

or

378,525,000 pounds

or

189,263 tons of EP toxic waste sand.

Docket Number: LD12-00222

Commenter: American Foundrymen's Society, Inc.

Comment:

3. Economic Impact Understated

As indicated in our December 21, 1989 submission, the Agency has severely understated the quantity of potentially EP toxic wastes generated by foundries. By our estimate, 317,669 tons of potentially EP toxic wastes were generated by foundries in 1988. Treatment costs for foundry waste range from $75 to $200 per ton of treated material to reach the characteristic level. This calculates to an approximate annual cost for foundries alone of at least 40 million dollars (using $125 per ton). These costs will easily double if lower treatment standards are imposed. In addition, the volume of the treated material to be disposed will more than double as the amount of chemicals added to the waste for treatment equals and exceeds the weight of the untreated waste.

As a result of, for example, diminished recycling of metallics, the potential exists for a major price increase in scrap as foundries search for higher quality scrap. This will be reflected in price increases in market-place products and will affect the foundry industry's ability to do global business. Indeed, we see a strong possibility that raw materials and castings currently melted and made in the U.S. would, in the future, be produced offshore. This would cripple these industries, whose economic situation is already bleak. (See data referenced in note 2 above).

2/ The nonferrous foundry industry is described, as is its dependence upon ingot manufacturers for raw material, in the OSHA Lead Remand data which AFS incorporated by reference on page two of its December 21, 1989 submission to EPA.

Docket number: LD12-L0247

Commenter: Hazardous Waste Treatment Council (HWTC)

Comment:

The limitations of thermal recovery should be dealt with by specifying a separate stabilization treatability group for high lead waste (50% lead). In all cases treatment of these wastes to a range of 2.2 to 3.8 PPM is achievable as shown by the data provided by our members as well as SLSA for the high lead subcategory.

Contrary to Exide Corporation comments, there is no reason to grant a capacity variance for the high lead subcategory. Instead of mandating recovery, EPA should raise the recovery threshold to up to 50% lead, and allow for stabilization. Chemical treatment and stabilization can achieve the proposed treatment standards for high lead waste. In this way the shut down of secondary lead smelters, alluded to by Exide will not occur.

5. Comments of the American Foundrymen's Society
(Docket #LD12-00042)

The comments of this organization suggests that EPA has underestimated capacity required for other EP toxic materials generated by foundries and ingot manufacturers. They highlight an additional 128,406 tons/year of EP toxic dust and sludges from iron and steel foundries, and 189,263 tons/year of EP toxic sands from brass and bronze foundries (see attachment 2 of their comments), for a total of 317,669 tons/year of lead waste they claim EPA has underestimated.

Based on stabilization of these wastes, more than adequate capacity exist. As noted in Section F-2above, EPA has shown that 344.5 million gallons/year available capacity exist for stabilization. Assuming a density of 10 lbs/gal. this equates to approximately 1.7 million tons/year of available capacity. The additional 0.317 million tons/year required capacity that the Foundrymen's Society claims EPA underestimated is therefore not a problem.

Finally, the effects of the TCLP test on required capacity is insignificant. The TCLP test is less aggressive, not more aggressive than the EP procedure, since the solution is buffered during the extraction. This is not a valid reason to grant a capacity variance for lead wastes.

6. Comments of Ciba Geigy (Docket #LD12-00136)

Ciba Geigy also presents arguments in favor of raising the recovery threshold above the current level of 2.5 percent. Ciba Geigy generates a wastewater sludge from manufacture of glass enamels. These wastes exceed 2.5%

7.9 CAPACITY VARIANCE REQUEST FOR THE BLAST WASTE GENERATED FROM REMOVAL OF LEAD-BASED PAINT FROM STEEL STRUCTURES

Summary:

The American Road & Transportation Builders Association (ARTBA; L0161) supported the appended comments of the Steel Structures Painting Council (SSPC) regarding "Land Disposal Restrictions for Third Third Scheduled Waste." Based on the high volume (five to 20 million gallons) of waste generated when old, lead-based paints are blast cleaned from steel structures, SSPC requested a capacity variance for this blast waste, asserting that there is insufficient alternative protective treatment, recovery, and disposal capacity for the waste. SSPC stated their concern that even if the lead treatment processes are suitable for the blast waste, it would not be possible for the equipment and facilities to be constructed and put into effect by May 8, 1990.

SSPC asserted that the tens of thousands of blast cleaning projects each year create an equal number of small quantity generators of lead-based paint waste which require service. SSPC estimated that in the last four years, three to five million gallons of this paint waste were generated from just the cleaning of an estimated 4875 - 5200 bridges, and that this waste quantity will increase severalfold when such structures as water tanks, military facilities, and those of the petroleum refining industry are taken into account.

Response:

EPA disagrees with these commenters that insufficient capacity exists to treat D008 nonwastewaters. EPA has promulgated concentration standards based on stabilization or thermal recovery (secondary smelting) for lead nonwastewaters. The proposed distinction of high- and low-lead subcategories has been dropped. EPA has determined that the combined available capacity for these two technologies is adequate to treat D008 nonwastewaters. EPA has determined that 479 million gallons of stabilization capacity and 37 million gallons of thermal recovery (secondary smelting) exist. If EPA assumes an additional 20 million gallons of waste exist, there is still adequate capacity to treat this waste. Because EPA has determined that enough capacity exists to treat D008 nonwastewaters, EPA has decided to not grant a national capacity variance for these wastes.

Some waste may be in the "inorganic solids debris" category, for which EPA has determined that there is not adequate capacity and has granted a two-year national capacity variance. If the commenters believe that their waste is significantly different from the waste used to determine the treatment standard, they may want to consider applying for a treatability variance.

Comments:

The comment relevant to a capacity variance request for the blast waste generated from removal of lead-based paint from steel structures is presented:

- The American Road & Transportation Builders Association (ARTBA; L161: pp. 1-7).

Docket number: LD12-L0161 7-185 Lead and Zinc Wastes

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

MAR 14 [illegible]

EPA RCRA Docket (OSS-305)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

RE: Docket S-89-LD12-FFFFF
Comments on 40 CFR Parts 148, 261, 264, 265, 268 and 271
Land Disposal Restrictions for Third Scheduled Waste

Dear Sirs:

The American Road and Transportation Builders Association (ARTBA) is a national federation of over 4000 firms and individuals engaged in the transportation construction industry. ARTBA members include highway and bridge contractors, equipment manufacturers, transportation planning and design consultants, traffic safety industry suppliers and manufacturers, construction material producers and suppliers, and educators in civil engineering.

ARTBA supports and concurs with the comments submitted by the Steel Structures Painting Council to this docket regarding "Land Disposal Restrictions for Third Scheduled Waste."

Thank you for the opportunity to respond to this rulemaking. Please let us know if ARTBA can be of any further assistance.

Sincerely,

T. Peter Ruane

T. Peter Ruane
President & CEO

cc: Steel Structures Painting Council

Docket number: LD12-L0161

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

[illegible]

Docket number: LD12-L0161

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

EPA RCRA Docket (OSS-305)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
Land Disposal Restrictions for Third Scheduled Waste

Comments by Steel Structures Painting Council

General Background

The Steel Structures Painting Council (SSPC) is a not-for-profit technical association whose major functions are to conduct research, develop standards, and disseminate information on protective coatings for industrial structures.

SSPC was established in 1950, and currently has more than 300 organizational members and more than 5,000 individual members. The constituency represented includes facility owners (public and private), paint manufacturers, paint raw material suppliers, paint applicators, equipment and abrasives suppliers, consultants, and engineering firms. The total value of the applied paint and related services is estimated at $3 to $5 billion based on a 1989 survey of work performed by painting contractors.

The protective coatings industry generates large quantities of abrasive waste due to the need to remove and replace weathered and deteriorated coatings from existing structures. Because of the predominant use of lead-containing paints in the industry until the 1970s, a large proportion of the structures are coated with lead based paints. When the coatings must be replaced, typically the old paint is removed by blast cleaning and the lead-containing residue is combined with the abrasive blast media. The latter include silica sand, smelter slags, steel shot or grit and other media.

Concern about Availability of Treatment Capability

Thus, a major concern of the industry is the removal and disposal of lead-based paint. The SSPC has spearheaded efforts to educate the industry on the hazards of this operation, and on the need to properly contain and dispose of lead residues. Two national conferences were sponsored by SSPC in 1988 and 1989 on this subject, with a third scheduled for March 1990. In addition, SSPC and many of its members have been active in pursuing research, development, and evaluation of various techniques and procedures for containing, processing, recovering the material. Special committees have been established and the SSPC's *Journal of Protective Coatings & Linings* has provided a regular source of information to enable the members to protect the environment and meet the RCRA requirements. Examples of SSPC and industry activities are listed in the bibliography.

Docket number: LD12-L0161

Commenter: American Road & Transportation Builders Association (ARTBA)

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
Land Disposal Restrictions for Third Scheduled Waste

Comments by Steel Structures Painting Council Page 2 of 6

The SSPC and its members, however, are extremely concerned about the proposed regulation regarding disposal of lead. In particular, we question the availability of suitable methods for treatment of spent abrasives containing lead to meet the proposed level of 0.51 ppm.

In the proposed rule in November 22, 1989 *Federal Register*, it is stated that processes developed to treat electroplating sludge are capable of reducing lead levels from 24,500 to 0.51 ppm, based on TCLP. It is also stated that another (unspecified) technique could reduce the level from 1000 ppm to 0.18 ppm.

Our concern is that the above techniques have not been used for treating abrasive waste. Thus, there is great question about whether these would be successful for these types of materials. Even if these processes were determined to be suitable, it is simply not possible for the equipment and facilities to be constructed and put into effect within the proposed time (i.e., by May 8, 1990).

Estimate of Quantity of Waste Generated

Abrasive paint wastes are generated from tens of thousands of separate blast cleaning projects each year, performed by an equal number of contractors. The number of plants and facilities requiring such services is also in the thousands. Many of the contractors would be classified as small generators of hazardous waste. Thus, scores or hundreds of processing facilities would need to be erected to accomplish the processing of the abrasive wastes generated. From previous studies of the test methods, we have established the high likelihood that any residue from a structure coated with a lead-based paint will be classified as hazardous waste material under the proposed TCLP regulation. Some of the evidence for this statement is contained in the Bibliography.

Regulations Considered Unfeasible

Some specific data regarding the number of structures affected can be derived from analysis of one segment of the industry, the highway bridge painting market. Under recent surveys performed by SSPC, we have determined that 75-80 percent of the 6500 bridges painted within the last four years contained lead-based paints. The estimated amount of abrasive debris generated from the painting of these bridges is estimated at 3 to 5 million gallons, per year. This amount would be increased by severalfold when taking into account the various other industries affected which have large numbers of structures coated with a lead-based paint, including the water tank industry, petroleum refining industry, military facilities, and others.

Based on the above, we believe that before the referenced processing techniques can be considered appropriate, it must be demonstrated that they can be made available on a wide basis. It must be demonstrated that this technology can be successfully applied to the enormous volume and diversity of the abrasives generated from removingpaint containing lead from structures.

In summary, we feel that the processes referenced by EPA do not constitute the best demonstrated available technology (BDAT)with respect to the processing of spent lead containing abrasives. While recognizing the Congressional mandate under which EPA is operating, we believe that the overall requirement as presented in the *Federal Register* of 11/22/89 is unfeasible and unreasonable.

Docket number: LD12-L0161

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
Land Disposal Restrictions for Third Scheduled Waste

Comments by Steel Structures Painting Council Page 3 of 6

Lack of Awareness and Confusion

In the few months since the publication appeared, SSPC has communicated with a number of agencies and organizations involved in waste containment, disposal, and processing. These individuals have included highway agencies, contractors, private facility owners, coating manufacturers, EPA officials, and representatives of processing and research firms. Our conclusion is that among the facility owners and contractors, the groups that would be directly affected by this regulation, there is a great lack of awareness of the impact of the land disposal restrictions and even of the act itself. Many of these would be characterized as small quantity generators. They are extremely ill-prepared to cope with and comply with the proposed regulations.

Our survey and correspondence has also indicated a tremendous confusion and lack of agreement among individuals responsible for and knowledgeable about RCRA and waste disposal. Waste disposal specialists and environmental scientists, along with EPA representatives and RCRA Hotline are frequently unable to agree on the interpretation of various aspects of the regulations. Thus, in spite of the EPA's best efforts, the sheer massiveness of the regulations and the short time available for assimilating and assessing them has resulted in numerous ambiguities and areas open to alternative interpretations. These are compounded by the fact that EPA officials and the RCRA Hotline are severely overloaded and unable to provide the type of explanation required to properly review and evaluate the proposed rules.

Request for Variance

The SSPC hereby requests that EPA grant a variance to the protective coatings industry for the disposal of lead-containing abrasives. The variance is based on two provisions cited in the *Federal Register* (page 48376 of *Federal Register*, Vol. 54, No. 224, 11/22/89) as follows:

1. National Capacity Variance

Based on the enormous volume of waste generated from blast cleaning (5 to 20 million gallons per year or 30,000 too 120,000 tons per year), SSPC claims that there is insufficient alternative protective treatment, recovery, and disposal capacity for the waste (RCRA Section 30004 (H 2)).

2. Variance from the Treatment Standards

The SSPC contends that the waste generated by abrasive blast cleaning is substantially different from electroplating sludge waste, on which the proposed treatment standards were based. The abrasive waste is a solid aggregate or steel grit type waste, which requires special techniques for containing, collecting, and conveying to potential processing facilities. In addition, the great number and diversity of the waste generation sites results in the need for an entirely different type of containment and processing facility. Moreover, the EPA has not demonstrated that the processing methodology utilized for the electroplating waste would be capable of handling the huge volume of waste debris generated from abrasive blast cleaning operations.

Docket number: LD12-L0161 7-190 Lead and Zinc Wastes

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
Land Disposal Restrictions for Third Scheduled Waste

Comments by Steel Structures Painting Council Page 4 of 6

We hereby request a variance from the requirements of this proposed regulation for a 2-year period, until May 8, 1992. This delay would allow the protective coatings and related industries to develop, evaluate, and implement effective techniques for minimizing the amount of waste generated and for processing the hazardous waste to allowable levels.

Respectfully submitted,

Bernard R. Appleman
Executive Director

cc:
AASHTO
AISI
API
ARTBA
ARBBAQ
AREA
ASTM
AWWA
EPRI
FHWA
NACE
NPCA
PDCA
FSCT
SNAME
SCA
TRB
WPCF
NADC
AISE
IABOSIW
NCEFR
IBPAT
ILZRO
AIA
AIPE
CSI

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Docket number: LD12-L0161 7-191 Lead and Zinc Wastes

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
Land Disposal Restrictions for Third Scheduled Waste

Comments by Steel Structures Painting Council Page 5 of 6

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Dixon, W., "Lead Paint Removal of Water Tanks and Reservoirs," Paper presented at meeting of SSPC Committee on Lead Paint Removal, Baltimore MD, November 17, 1987.

Hansel, D., "Vacuum Recovery Systems for Abrasives," *Surface Preparation: The State of the Art*, Proceeedings of the SSPC Annual Symposium, May 22-23, 1985, Cincinnati, OH, ed. B. R. Appleman and H. E. Hower (SSPC 85-06).

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Rekus, J.F., "Working on Structural Steel: The Lead Hazard," *Journal of Protective Coatings & Linings*, Vol. 5 No. 1, January 1988, p. 38.

Smith, L. M., E. J. Kaplan, and J. B.Byers, "Surface Preparation Under Current Environmental Regulations," *The Economics of Protective Coatings*: Proceedings of the Seventh Annual SSPC Symposium, November 14-17, 1988, Baltimore MD, ed. B. R. Appleman, J. Rex. (SSPC 88-03).

Commenter: American Road & Transportation Builders Association (ARTBA)

Comment:

SUBJECT: DOCKET S-89-LD12-FFFFF
Comments on 40CFR Part 148, 261, 264, 265, 268, and 271
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Selected Articles from *Lead Paint Removal From Steel Structures*, Proceedings of the Steel Structures Painting Council Symposium, February 29-March 1, 1988, Arlington, VA , ed. B. R. Appleman and J. Rex (SSPC 88-01):

Anderson, G. "Lead Contaimnation of Soil by Sandblasting of Bridges"
Batten, M., and F. Leech, "Protecting the Environment During Coating Rehabilitation in Ontario"
Friedman, D. "Toxicity Levels and Test Procedures"
Hojnacki, J. "Removing Particulates from Containment Structures"
Leming, M and P. Khosla, "Recycling of Lead-Contaminated Blasting Sand"
McPhee, W., and J. van Leeuwen, "A New Type of Vacuum Blasting Equipment for Removing Lead Paints"
Spagnolli, D. and P. Remy, "Experience with Removal of Lead-Based Paint in Western Pennsylvania"
Tinklenberg, G., "EP TOX: Michigan's Experience"
Trimber, K., and S. Solomon, "Analysis of Leachable Lead on Bridges of the Port Authority of New York and New Jersey"

Selected articles from *Lead Paint Removal from Industrial Structures*, Proceedings of the Steel Structures Painting Council Lead Paint Removal Conference February 27-March 1, 1989, Arlington, VA, ed. B. R. Appleman and J. Rex (SSPC 89-02):

Adkison, P., and S. Poncio, "Complying with Regulations on Lead Paint Removal from Utility Structures"
Cavallo, J., "Overview and Scope of the Containment Problem in the Utility Industry"
Richard, K., "Containment and Removal of Leaded Materials on Water Tanks"
Harris, J. , and J. Fleming, "Testing Lead Paint Blast Residue to Pre-Determine Waste Classification"
Harrison, J., "Removing Lead Paint From Bridges Using Recycled Steel Abrasive"
Lyras, L., "Lead Containment Structures for Bridge Painting"
Medford, W., "Containing Lead-Contaminated Blasting Sand: A Case History"
Smith, L., and J. Byers, "Surface Preparation Under Current Environmental Regulations"

7.10 THE STABILIZATION STANDARD FOR K069 NONWASTEWATER CALCIUM SULFATE SUBCATEGORY CANNOT BE ACHIEVED AND THEREFORE REQUIRES A CAPACITY VARIANCE

Summary:

Two commenters (Exide; 117) and Secondary Lead Smelting Association (SLSA; 161)) reported that the stabilization standard proposed for K069 nonwastewaters was unobtainable for the K069 calcium sulfate subcategory. Exide (117) suggested stabilization as BDAT for all wastes exceeding its recommended concentration standard and requested a capacity variance until stabilization capacity could be ensured. SLSA (161) requested a national capacity variance for K069 calcium sulfate in the event that the commenter's recommended standard of 1.7 mg/l lead was not adopted by EPA.

Response:

EPA disagrees that the stabilization standard for K069 calcium sulfate nonwastewaters is unachievable. EPA bases the granting of variances on an analysis of the national capacity estimate of required and available capacity. EPA has data indicating that 41 gallons of K069 wastes are surface-disposed (See Background Document for Third Third Wastes to Support 40 CFR Part 268 Land Disposal Restrictions, Proposed Rule Nov. 1989). The 479 million gallons of available stabilization capacity is sufficient for handling K069 nonwastewaters, consequently, EPA is not granting K069 calcium sulfate nonwastewaters a national capacity variance. However, if the commenter believes that their waste is significantly different from the waste used to determine the treatment standard, they may want to consider applying for a treatability variance.

Comments:

The comments relevant to the stabilization standard for K069 nonwastewater calcium sulfate subcategory cannot be achieved and therefore requires a capacity variance are presented in the following order:

- Exide (117: p.); and
- Secondary Lead Smelting Association (SLSA; 161: p.).

Docket Number: LD12-00117

Commenter: Exide Corporation

Comment:

Given Exide's previously stated concerns about EPA's authority to require stabilization of wastes to achieve leachable metal concentrations which are lower than characteristic levels and Exide's concerns for the transfer of K061 stabilization data to K069 wastes, Exide proposes that the BDAT for K069 Calcium Sulfate Subcategory sludges be written in the following manner:

1) Regulated constituents - lead concentration of 1.7 mg/l and cadmium concentration of 0.50 mg/l (e.g., using the same criteria as specified in Exide/General Battery Corporation's Notice of Nonapplicability Order with Pennsylvania DER) in leachate from the EP toxicity test, and

2) Stabilization (to meet the above criteria) for concentrations in the waste which exceed the concentrations specified above. (For the reasons previously outlined, Exide Corporation requests that a national capacity variance be issued until such time as stabilization capacity can be ensured).

Exide Corporation, for the reasons previously described, is also concerned that the above criteria are not appropriate for K069 (Sodium Sulfate Subcategory) wastes that are expected to be generated at Exide/General Battery Corporation's facility in Muncie, Indiana. Exide Corporation believes that the BDAT treatment standards for this waste would be best written as follows:

1) Metals reclamation by secondary lead smelting, or

2) Stabilization to achieve EP toxicity values at the characteristic level. (For the reasons previously outlined, Exide Corporation requests that a national capacity variance be issued for this waste until such time as stabilization capacity can be ensured).

Docket Number: LD12-00161

Commenter: Secondary Lead Smelting Association, Inc. (SLSA)

Comment:

6. K069 Calcium Sulfate Subcategory

For nonwastewater forms of K069 calcium sulfate subcategory, EPA has proposed a BDAT based on stabilization of 0.24 mg/l of lead. The SLSA contends that the transfer of technology from K061 is neither technically feasible nor appropriate for this waste. It is the SLSA's understanding that only one lead recycling facility, located in Pennsylvania, generates this waste. The Pennsylvania Department of Environmental Resources has specifically recognized that the proposed BDAT is inappropriate and not technologically feasible. The state has, however, imposed a treatment standard of 1.7 mg/l for this material. The SLSA contends that the 1.7 mg/l treatment standard is more representative BDAT for this waste. Accordingly, the SLSA requests EPA to adopt the state's treatment standard rather than rely on transfer of technology from other waste codes from other industries. In the alternative, the SLSA proposes that EPA grant a nationwide capacity variance for this waste until sufficient technologically feasible treatment capacity becomes available.

7.11 DATA SUBMITTAL ON GENERATION OF K069 IN RESPONSE TO STATEMENT BY EPA

Summary:

One commenter (Exide; 117)) advised EPA that they would be bringing a new secondary lead smelting facility on-line soon which would generate a sodium sulfate K069 waste, possibly amenable to recovery through secondary lead smelting. EPA had indicated at 54 FR 48457 that only one generator of K069 calcium sulfate waste existed and that the waste could not be directly recycled to recover lead.

Response:

EPA acknowledges Exide's comment, updating EPA on this new facility and its potential sodium sulfate waste. EPA, however, does not factor such hypothetical waste volumes into its capacity analysis. See, e.g., Kennecott v. EPA (780 F.2d 445, 4th Cir. 1985).

Comments:

The comment relevant to this issue is presented as follows:

- Exide Corporation (117: p.).

Docket Number: LD12-00117

Commenter: Exide Corporation

Comment:

EPA has indicated (54 Fed. Reg., 48457) that the Agency believes that there is only one generator of this waste and that the waste cannot be directly recycled to recovery lead. Exide Corporation has already provided information to EPA as part of earlier rulemaking efforts to describe the emission control system at Exide/General Battery Corporation's facility in Reading, Pennsylvania which generates the K069 waste.

Exide Corporation also wishes to advise the Agency that Exide is also in the process of start-up of a secondary lead smelting operation in Muncie, Indiana. In contrast to the Pennsylvania facility which currently uses lime and generates a K069 calcium sulfate waste, the emission control system at the Indiana facility will be operated using a sodium compound as a neutralent, an operation which will generate a K069 sodium sulfate waste. The benefits of the sodium-based scrubbing system, if successful, will be that a smaller volume of sludge will be generated which may be recyclable through secondary lead smelting operations. Since the volume of sodium sulfate sludge which will be generated at Exide's Indiana facility will be less than the volume of calcium sulfate generated at Exide's Pennsylvania facility, it is likely that the metal content of the sodium sulfate sludge will be higher and thus expected to produce higher leachable metal levels when subjected to EP or TCLP analytical procedures.

7.12 MISCELLANEOUS DATA SUBMISSIONS

Summary:

EPA received miscellaneous data from three commenters (GNB, Inc. (34), East Penn Manufacturing (174), and Vision-Ease (213)). GNB, Inc. (34), a commercial battery recycler, stated that it recycled 150,000 tons of lead per year. East Penn Manufacturing (174) stated that it recycled 3 million lead acid batteries per year. Vision-Ease (213) submitted data on the waste characteristics of its lead-containing solids.

Response:

EPA acknowledges the information submitted by GNB, East Penn and Vision-Ease and will use this data where applicable.

Comments:

The comments relevant to miscellaneous data submissions and requests are presented in the following order:

- GNB, Inc. (34: pp. 1-2);
- East Penn Manufacturing (174: p. 5); and
- Vision-Ease (213: Attachments 1 and 2).

Docket Number: LD12-00034 7-200 Lead and Zinc Wastes

Commenter: GNB, Inc.

Comment:

DECEMBER 22, 1989 DATA SUBMISSION OF GNB, INC. TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY IN RESPONSE TO THE PROPOSED RULE FOR LAND DISPOSAL RESTRICTIONS FOR THIRD SCHEDULED WASTES: D008 WASTES AND LEAD ACID BATTERY RECYCLING

GNB, Inc. (hereafter, "GNB") submits this data in response to the request of the United States Environmental Protection Agency (hereafter, "EPA") for data with respect to the recycling of lead acid batteries and treatment of D008 wastes. GNB may submit further data as developed between today and submission of its comments on January 8, 1989; the data submitted today is necessarily abbreviated due to the short period allowed between November 22 and December 22, 1989.

GNB operates battery recycling facilities in Los Angeles, California, Frisco, Texas, and Columbus, Georgia. These facilities recycle approximately 150,000 tons of lead per year. The feedstock purchased for the facilities is used batteries and other materials comprised approximately 50% or more of lead. The feedstock is crushed, plastic battery cases are shredded for recycling, sulfuric acid electrolyte is neutralized, and lead bearing materials are separated out for further processing. This processing includes smelting in either a reverberatory or blast furnace heated with gas and coke, respectively, with the resulting bullion tapped into processing kettles and waste products tapped from the upper surface of the bullion into slag pots. These waste products then solidify into a "button" of slag and/or matte.

Docket Number: LD12-00034 (continued)

Commenter: GNB, Inc.

Comment: (continued)

Approximately one ton of these waste products is produced for every 10 tons of lead produced. Slag is an amorphous glassine substance comprised primarily of silica, sodium and calcium compounds, and iron compounds, as well as refractory brick and varying amounts of lead. Slag has a specific gravity of approximately 3.5, with the lead primarily in the form of lead oxide, bonded to silicon dioxide, as occurs in leaded glass. Matte is a striated matrix of crystalline compounds, comprised primarily of iron sulphide, lead sulphide, with silica, sodium and calcium compounds, as well as refractory brick and varying amounts of lead, with a specific gravity of approximately 7.

For further information, please contact Alexander W. Sierck, Beveridge & Diamond, P.C., 1350 Eye Street N.W., Suite 700, Washington, D.C. 20005, (202) 789-6014, or Edward Forgotson, 1350 Eye Street N.W., Suite 700, Washington, D.C. 20005, (202) 789-6027.

Docket Number: LD12-00174 (continued)

Commenter: East Penn Manufacturing Co., Inc.

Comment: (continued)

("RCRA")[2]. East Penn recycles over 3 million spent lead acid batteries annually; every such battery recycled is one less battery that will be sent to a landfill or illegally disposed of in some other fashion. Based upon these valid policy reasons, EPA should, therefore, set treatment standards which will ensure that this desirable activity is continued until technology can be developed to produce residues from the secondary smelting operations with leach levels consistently below the characteristic level of 5.0 mg/l or until capacity can be developed to treat the residues through stabilization.[3]

From a legal standpoint there is no reasonable basis to support EPA's decision to apply a treatment standard to the slag

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[2] See RCRA Section 1002(c), 42 U.S.C. § 6901(c) (reciting the congressional finding that "(1) millions of tons of recoverable material which could be used are needlessly buried each year; (2) methods are available to separate usable materials from solid waste; and (3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments"); RCRA Section 1003(a)(6), 42 U.S.C. § 6902(a)(6) (articulating the congressional objective of "minimizing . . . the land disposal of hazardous waste by encouraging . . . materials recovery"). See also H.R. Rep. No. 1491, 94th Cong., 2d Sess. 11 (1976) (RCRA "proposes a way to lessen the drain on our domestic resources and to decrease our dependence on foreign sources of raw material and energy, both of which can be reclaimed from waste").

[3] To do otherwise could result in a rule contrary to the policy of RCRA in setting recycling as a desirable goal. Unrealistic treatment standards for the waste produced in recycling could have the effect of "taxing" recycling and thereby make the use of virgin lead more attractive.

Docket Number: LD12-00213

Commenter: Vision-Ease

Comment:

Section C

Waste Characteristics

During the production of glass lenses, the hazardous wastes listed below are generated:

Lead containing solids:

1. Diamond generating solids.
2. Centrifuge solids.
3. Coolant batch dump solids/filter press solids.

Solvent waste:

1. Trichloroethylene.

The characteristics of these wastes are summarized in Table C-1.

Description of Waste

- Lead-Containing Solids

These solids are produced in the lens grinding operations (diamond generated solids and centrifuge solids), the polishing operations (coolant batch dump solids), and from the wastewater treatment system (filter press solids). All of these solids are composed primarily of fine glass solids and water. Lead content depends on the type of glass in the lenses and segments being used in the production process. Attachment C-1 presents a summary of the glass composition ranges as described by the glass manufacturers Corning and Schott. The unlisted majority composition of these glasses is, of course, SiO_2.

Based on the glass compositions provided by the manufacturers and usage rates at Vision-Ease, a typical composition of the lead-containing solids is presented in Table C-1. Samples of the diamond generated solids were analyzed for heavy metal content using X-ray fluorescence. This method identified the presence of Si, Pb, Ba, Ni, Cu, Zn, K, Ca, and Fe.

Quantification on powdered samples using this procedure may be subject to considerable errors resulting from a non-uniform carbon coating of the sample surface prior to analysis. Samples analyzed in 1982 produced the

Waste Characteristics
(Continued)

Description of Wastes

- Lead-Containing Solids (Continued)

typical compositions for these wastes summarized in Table C-1. A series of tests on diamond generated solids (1983) produced lead concentrations (expressed as oxides) ranging from 12 to 22 percent on a wet weight basis and barium concentration (expressed as oxides) of 12 to 14 percent (see Attachment C-2). However, samples of diamond generated solids were also analyzed for total lead content via flame atomic absorption following a HNO_3-HCl digestion procedure per the EPA/Corps of Engineers publication "Procedures for Handling and Chemical Analysis of Sediment and Water Samples." The results of these samples showed that the lead contents ranged from 4 to 7 percent. This suggests that the 1983 concentration via X-ray florescence were subject to considerable error.

The filter press solids differ slightly in that fine cerium oxides from the settling tank and iron hydroxides and calcium hydroxides from the reaction tank are present in addition to the glass solids in Table C-1.

Numerous percentage moisture tests have been performed in a variety of these waste solids which indicate a typical percent moisture is about 30 percent. These tests consist of weighing a small sample of the waste, drying for several hours, and reweighing the waste to determine the weight loss.

Untreated glass solids waste is a sludge type material that appears very similar to wet cement. The color of these glass solids varies depending upon its source. Diamond generating, and centrifuge solids range from very light gray to a medium gray Filter press solids acquire a light brown color from the ferric chloride used in the flocculation process.

Treated glass solids display the same color variations as the untreated solids. After treatment, the solids form into a dry, solid material that clumps together.

Table C-1

Waste Characteristics

Hazardous Waste Constituent	EPA HW No.	EPA HW Code	Annual Quantity Generated	Analysis (Wt. %)	Disposal Technique
Lead-containing solids	D008	E	400 - 500 tons	70% SiO_2 3% BaO 7% PbO 2% B_2O_3	Treatment and co-disposal.
Trichloroethylene	F001	T	6000 lbs.	15%-20% $Cl_3C_2H_2$ 80%-85% Waxes	Storage for 90 days, shipment to incineration facility/ fuel blending facility.

TREATED SOLIDS LOG 1989

Ship. #	Lugger I.D.	Total Weight	Treated	Comp. Pb	Comp. Ba.	Manifest #	V.E. Log #	Shipped
**89	2128	10755	1/2-1/5	0.5	21	SWM#52979	#00132	1/31/89
90	1232	23865.9	1/6-1/14	2.8	51	SWM#52980	#00133	2/16/89
90	12114	15884.4	1/14-1/20			SWM#52980	#00133	2/16/89
91	2130	23600	1/20-1/27	0.5	40	SWM#52981	#00134	3/1/89
91	2122	16165.4	1/30-2/3			SWM#52981	#00134	3/1/89
92	2057	23923.9	2/3-2/13	1.4	41	SWM#52982	#00136	3/14/89
92	2190	16284.3	2/13-2/18			SWM#52982	#00136	3/14/89
93	2034	24138.6	2/18-2/28	1.7	63	SWM#52983	#00137	3/29/89
93	2219	15802.6	2/28-3/4			SWM#52983	#00137	3/29/89
94	2029	23585.3	3/6-3/11	1.7	51	SWM#52984	#00138	4/7/89
94	2135	15945.6	3/11-3/16			SWM#52984	#00138	4/7/89
95	2227	23850.8	3/16-3/23	1.4	60	SWM#52985	#00140	4/26/89
95	2191	15857	3/28-3/31			SWM#52985	#00140	4/26/89
96	2195	23822.6	3/31-4/7	1.5	17	SWM#52986	#00141	5/4/89
96	2018	15814.8	4/8-4/13			SWM#52986	#00141	5/4/89
97	2122	23943.3	4/13-4/20	2.9	69	SWM#52987	#00142	5/15/89
97	2041	15611.2	4/20-4/24			SWM#52987	#00142	5/15/89
98	2120	23914.3	4/25-5/2	4.8	48	SWM#52988	#00143	5/24/89
98	2171	15858.5	5/2-5/5			SWM#52988	#00143	5/24/89
99	2071	23879.6	5/5-5/12	0.8	54	SWM#52989	#00144	6/12/89
99	2223	15906.1	5/15-5/18			SWM#52990	#00144	6/15/89
100	2228	23933	5/18-5/24	1.8	42	SWM#52991	#00145	6/19/89
100	2163	15423.3	5/24-5/31			SWM#52991	#00145	6/19/89
101	2051	24022.8	5/31-6/6	3.2	52	SWM#52992	#00146	6/29/89
101	2131	15969.2	6/6-6/9			SWM#52992	#00146	6/29/89
102	2212	23988.6	6/12-6/16	1.7	41	SWM#52993	#00148	7/13/89
102	2197	15929	6/16-6/21			SWM#52993	#00148	7/13/89
103	2079	23931	6/21-6/29	2.2	33	SWM#52994	#00149	7/31/89
103	2235	16082.4	6/29-7/5			SWM#52994	#00149	7/31/89
104	2115	22801.2	7/6-7/13	1.8	19	SWM#52995	#00150	8/14/89
104	2161	15642.8	7/14-7/20			SWM#52995	#00150	8/14/89
105	2218	24169.5	7/21-8/1	3.6	49	SWM#52998	#00152	8/25/89
105	2095	15887.3	8/1-8/4			SWM#52998	#00152	8/25/89

TREATED SOLIDS LOG 1989

Ship. #	Lugger I.D.	Total Weight	Treated	Comp. Pb	Comp. Ba.	Manifest #	V.E. Log #	Shipped
106	2083	24237	8/4-8/14	5.8		IL#3039722	#00153	10/10/89
106	2107	15913.3	8/15-8/18	12	71	IL#3039722	#00153	10/10/89
107	2145*	24000		0.5	3.2	SWM#52996	#00154	8/21/89
107	2022*	16000				SWM#52996	#00154	8/21/89
108	2103*	24000		0.5	3.2	SWM#52997	#00155	8/21/89
108	2140*	16000				SWM#52997	#00155	8/21/89
109	2019*	24000		0.5	3.2	SWM#52999	#00156	8/23/89
109	2104*	16000				SWM#52999	#00156	8/23/89
110	2128	23871.3	8/18-8/28	3.8	51	SWM#53000	#00157	9/19/89
110	2152*	14000		0.5	3.2	SWM#100189	#00157	9/19/89
111	2113	23556.7	8/29-9/1	3.1	49	SWM#119884	#00158	9/26/89
111	2102	15959	9/5-9/8			SWM#119884	#00158	9/26/89
112	2032	23801.9	9/11-9/19	6.2	60	ILL#3039723	#00159	10/12/89
112	2236	15968.5	9/20-9/25			ILL#3039723	#00159	10/12/89
113	1202C	28811.2	9/25-10/2	2.4	58	SWM#119885	#00160	10/25/89
113	2078	15963.5	10/2-10/6	1.7	45	SWM#119885	#00160	10/25/89
114	2157	23959.1	10/6-10/12	9.1	150	SWM#119887	#00161	11/29/89
114	2007	15784.9	10/13-10/18	1.8		SWM#119887	#00161	11/29/89
115	1224	23997.4	10/18-10/25	2.6	47	SWM#119886	#00163	11/21/89
115	2083	15931.7	10/25-10/30	1.8	47	SWM#119886	#00163	11/21/89
116	2044	23999.3	10/30-11/6	1.9	42	SWM#119888	#00164	12/5/89
116	2023	15922.2	11/7-11/13			SWM#119888	#00164	12/5/89
117	2094	23734.6	11/13-11/21	3.1	23	SWM#119889	#00165	12/19/89
117	2214	15785.6	11/22-11/28			SWM#119889	#00165	12/19/89
118	2184	23925.9	11/29-12/6				#00166	
118	2075	15969.2	12/6-12/12				#00166	
119	2042	23842.6	12/12-12/18				#00168	
119	1208	15576.4	12/19-12/21				#00168	
	TOTAL - LBS.	1206701.6	AVG. -	2.694118	43.9625			
	TONS	603.35	ST. DEV.-	2.474469	27.356968			

BOLD- PACE RESULTS

Waste Characteristics
(Continued)

Waste Analysis Plan

- Treated glass solids.

The treated glass solids will be sampled from the solids mixer following treatment of each batch. At the end of the treatment cycle, the treated waste solids should be virtually homogeneous. (Dye tests, using this mixer, showed that dye was transferred throughout the untreated solids in about two minutes. After all stabilization agents have been added to the glass solids in the mixer, they will be mixed for five minutes, scraped from the sides of the mixer, and then mixed for an additional five minutes. This mixing technique will assure uniform consistency.)

The sampling will be conducted with a laboratory sized trier. A clean trier will be inserted into the treated waste (0 to 45° from horizontal), rotated to cut a core, and removed with the concave side up. The sample will be transferred to a zip lock storage bag. The trier will be inserted at least four different locations to obtain sufficient sample for testing. (Each corne: of the mixer will be sampled).

Each batch of mixed/treated glass solids will then be represented by a sample that has been packaged and labeled. The treated batch of glass solids will then be placed into an open topped shipping lugger along with other batches of similarly treated glass solids.

As part of the treatment operation, the weight of waste solids and additives will be recorded by batch, on a daily solids mixing record. (Attachment #C-3). After the open topped lugger is full of treated waste, a calculation will be performed to determine the fractional quantity and weight from each batch sample which is required to make a representative composite sample.

Each batch sample will first be reduced in particle size to ensure that it passes a 3/8-inch sieve. The batch sample will then be thoroughly intermixed, and a representative subsample of appropriate size, according to the calculated weight for the composite, will be taken using the trier.

Waste Characteristics
(Continued)

Waste Analysis Plan

- Treated glass solids (Continued)

All of these subsamples will be combined to form a composite sample on a sheet of plastic or other appropriate material. This composite sample will be thoroughly mixed using the procedure specified in the ASTM Method A water leach test. Basically, this procedure consists of pulling in a corner of the plastic sheet across the waste toward the opposite corner causing the waste to tumble and intermix.

This procedure is repeated for each adjacent corner moving from corner to corner in a clockwise manner for a total of at least ten revolutions. From this mixed composite, a sample for testing will be obtained.

The treated composite waste sample will be tested using the EP toxicity procedure. The leaching will be performed by an approved outside lab using the extraction methods as described in 40 CFR Part 261 Appendix II.

The analysis for lead will be conducted using atomic absorption spectroscopy as described in "Test Methods for Evaluating Solid Wastes" Methods #7420 and 7421.

The EP toxicity results of the composite lugger sample will be obtained prior to shipment of the treated glass solids. This will assure that the disposal of waste material will be conducted in accordance with state and federal regulations.

- Trichloroethylene.

The solid wax/trichloroethylene waste will be sampled from a drum, once per year, using a stainless steel trier. The sample will be analyzed, by evaporation, to verify % waxes versus % trichloroethylene and by gas chromatograph to verify that the solvent component is in fact trichloroethylene. Table C-2 summarizes the analytical tests for various waste samples.

Table C-2

Hazardous Waste Analysis

Waste Stream	Parameters Tested	Analysis Method	Analysis Reference	Sampling Method	Frequency*
Treated solids	pH, lead, barium	EP toxicity test procedure	Lead analysis by ICP Atomic absorption As described in "Test methods for evaluating solid waste" Methods 7420 & 7421 Extraction method as described in 40 CFR Part 261 App II. Barium analysis by method #7080	Trier, each batch/composite sample prepared	Per shipment (two filled luggers = 40,000 lbs.)
Trichloroethylene	Trichloroethylene oil and grease water	Gas chromatograph	Test method for evaluating solid waste. Physical/ chemical methods	Stainless trier	Annually

* Note: This frequency may be increased if the composition of the sample is determined to have changed significantly.